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and Building Age

NAME REGISTERED U. S. PATENT OFFICE AND CANADIAN REGISTRAR OF TRADE MARK

JULY, 1938

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ASBESTOS WALLBOARDS

Office with entire walls of K & M "Century" Decorative Sheetflextos. This material is integrally colored with mineral pigments, finished with a polished wax surface, and comes both scored and unscored.

Bathroom walls and ceiling of K & M "Century" Asbestos Waltile—a high-gloss, rigid asbestos-cement sheet that is sanitary and durable. Sheets are scored into 4" squares, and are available in six pleasing colors.

Kitchen walls of K & M "Century" scored Linabestos, a rigid, smooth-surfaced sheet which may be used for exterior or interior sheathing. Also available unscored.

● You are sure of quick sales at a good profit when you provide the kind of interiors that today's home-buyers want. "Century" Asbestos Wallboards dress up a home... make it easier to sell... make customers realize your homes are a sound investment. Few other building products can pay such substantial returns, in terms of rapid turnover at prices that bring you real profit.

KEASBEY & MATTISON COMPANY AMBLER, PENNA.

SEND FOR DATA ON K & M BUILDING PRODUCTS

Asbestos Roofing and Siding Shingles
Asbestos Flexible Wallboard (Sheetflextos)
Asphalt Roofing Products
Asbestos-Cement Structural Board and Sheathing (Linabestos)
Asbestos Decorative Waltile
K & M Mineral Wool Insulations for the home

Underline the products on which you want data and mail this coupon today.

NAME _____

NAME OF FIRM _____

ADDRESS _____ 4-4

PUBLISHER'S PAGE

"Recession" and Recovery

ACCUMULATING evidence indicates the "recession" in general business stopped early in May. The decline began in June, 1937. It continued until the volume of total production and commerce became 30 per cent less than in 1937, and almost 50 per cent less than in 1929. During the first four months of 1938 it was even less than in 1932. Since the middle of May some improvement apparently has been occuring.

The building industry has been favored. The decline in its business during the "recession" was relatively much less than in business as a whole. But building is still far below normal. And the level of business in general is still very low—45 per cent below its *average* level in the five years 1925-1929 preceding the depression.

DURING its recent session Congress passed some more "recovery" legislation. It bears a striking resemblance to that passed just five years ago in 1933 when it was assumed there existed an unprecedented "emergency" requiring unprecedented action. Vast appropriations for lending and spending for public works and relief because of extensive unemployment were made again.

Did the "recovery" legislation passed five years ago accomplish its purpose? Evidently not. It was passed in May and June, 1933. During the intervening five years the national debt increased 20 billion dollars. But the country's total business in May and June, 1938, *was almost exactly the same,*—in other words was *almost exactly as bad*—as in May and June, 1933. Why assume such legislation will promote recovery in future when demonstrably it has failed to do so for five years?

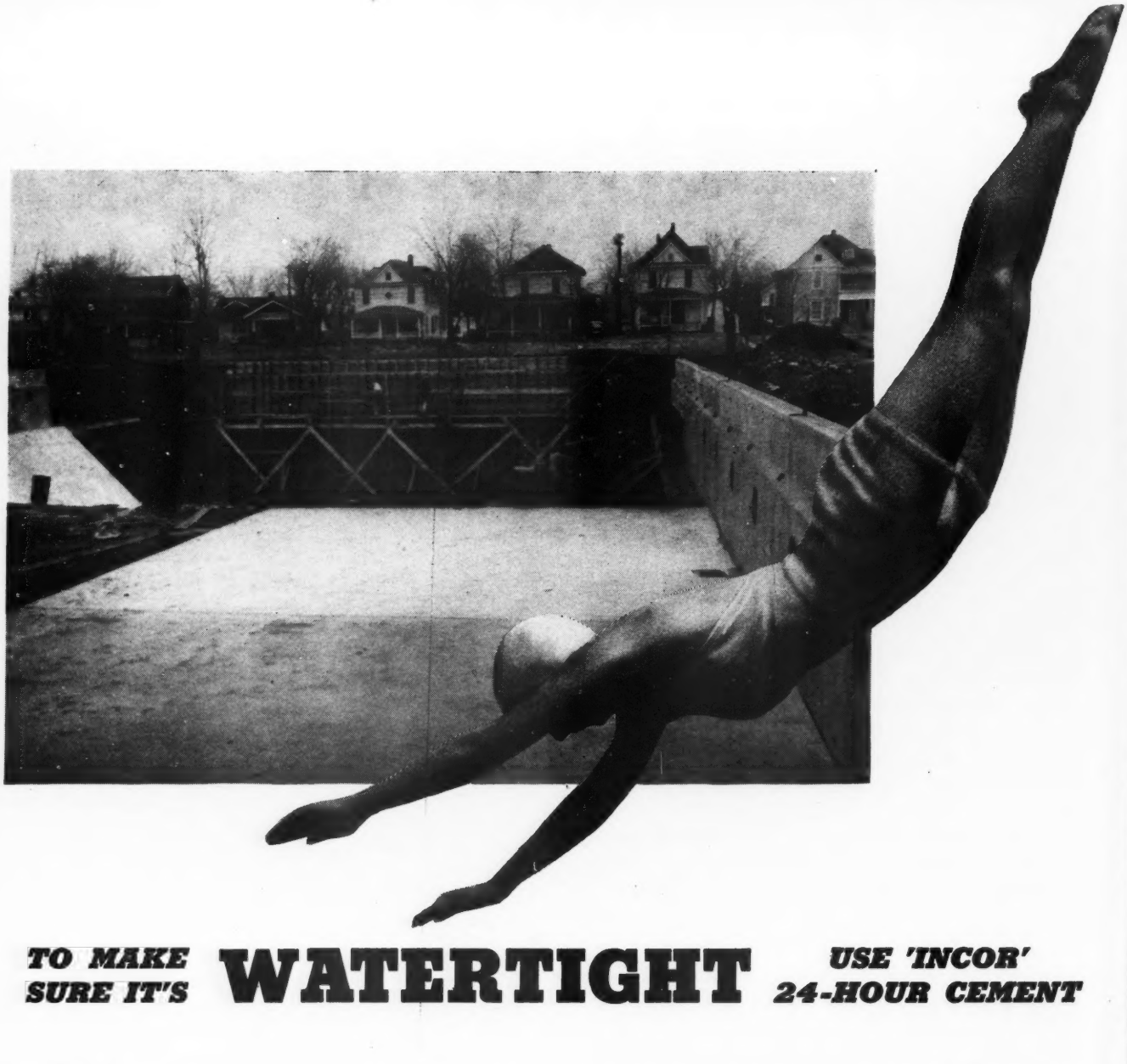
Have the American people and their leaders completely forgotten how to create prosperity? We have now had eight and a half years of depression—three and a half under the "Old Deal" and five under the "New Deal"—and present total production and commerce would have to be increased *almost 100 per cent* to make them as large as they averaged during the five years 1925-1929. The country had four major depressions before this one. *None of them lasted half as long as this one has already.* Yet after eight and one-half years of this one business is still almost as bad as at its worst in 1932 and 1933. How long, then, is this one going to last?

IT will last until government, business and labor adopt policies that will cause our available labor to be put to work by *private productive enterprise.* And these must be policies that will cause our available *capital* to be put to work by *private productive enterprise.* Private enterprise has failed, and still fails, to put enough labor and capital to work because it has feared, and still fears, that government policies will cause it to make *losses* instead of *profits* on additional capital it might invest as well as on capital already invested. And labor and capital *must be put to work together or not at all.*

Huge government spending will in the long run, as in the past, *do more harm than good.* Whether and when recovery will occur will be determined by whether and when government and labor join business in policies that will cause a *vast increase in investment of capital by private enterprise.*

Samuel O. Dunn

SIMMONS-BOARDMAN PUBLISHING CORPORATION: SAMUEL O. DUNN, CHAIRMAN OF THE BOARD; HENRY LEE, PRESIDENT; BERNARD L. JOHNSON, ROBERT H. MORRIS, DELBERT W. SMITH AND ROBERT E. CLEMENT, VICE-PRESIDENTS; ROY V. WRIGHT, SECRETARY; E. T. HOWSON, ASSISTANT SECRETARY; JOHN T. DE MOTT, TREASURER. EXECUTIVE AND EDITORIAL OFFICES: 105 WEST ADAMS STREET, CHICAGO; 30 CHURCH STREET, NEW YORK CITY



TO MAKE SURE IT'S **WATERTIGHT** ***USE 'INCOR' 24-HOUR CEMENT***

EXPERIENCED contractors avoid needless risks; they make sure concrete is carefully proportioned, mixed and placed; then try to keep it wet 7 to 10 days. But often that is impossible; job conditions won't permit —the concrete has to be used sooner. Which explains the nation-wide swing to 'Incor' 24-Hour Cement for watertight concrete work:

Because 'Incor' combines with water 5 times as fast—so concrete only has to be kept wet one-fifth as long. Result, watertight curing in 24 to 48 hours—6 to 8 days less than usual. That means: (1) lower curing costs—and, make no mistake, it does cost money to cure concrete; (2) earlier form re-use, reduced form costs; (3) lower overhead, through faster completion; (4) increased labor efficiency . . . smoother, steadier job progress. Example:

On Olympic-size swimming pool (above) at State Teachers' College, Springfield, Mo., 'Incor' was self-supporting in 24 hours—saving two sets of forms, at $300 a set. And concrete is strong, dense, watertight—clean as a hound's tooth.

It pays to estimate each job with both Lone Star and 'Incor'. Use 'Incor'* where faster job curing saves you money; otherwise, use Lone Star, the quality standard for over a quarter century. Write for copy of "Watertight Concrete." Lone Star Cement Corporation, Room 2229, 342 Madison Avenue, New York. *Reg. U. S. Pat. Off.

LONE STAR
CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT...'INCOR' 24-HOUR CEMENT

AMERICAN BUILDER
AND BUILDING AGE

Rent Subsidy Rather Than Public Housing

THAT the government should "get out and stay out" of the home building business has been urged by this publication on several occasions. The costly and ineffective "demonstration" efforts of government bureaus during the past four years to build subsistence homes, "green belt" villages, and city slum clearance housing projects have given us no reassurance but only apprehension and dismay.

Even though millions of dollars of public funds have been poured into construction industry channels by these projects, this publication is still against them, believing as it does that every dollar of public money so distributed is preventing two dollars of private funds from going into needed home building and economically sound rental housing.

The 51 all-federal city slum clearance projects erected by the Housing Division of the Public Works Administration have been turned over for leasing and management to the United States Housing Authority; and almost a billion dollars of additional federal tax funds have been allocated to this Authority for a vast further extension of subsidized tenement building. A number of the states, New York and Illinois among them, are now considering the required legislation to qualify for their share of this "easy money."

While in these days it seems so popular to try to get something for nothing, this publication is encouraged to note that there are substantial groups of voters in the several states and cities that are opposing legislation for subsidized housing and are standing firm for the rights of private home ownership. Prominent among these is The Merchants' Association of New York. The abandonment of all plans involving capital subsidies for housing and the substitution therefor of a plan whereby relief to those unable to pay an economic rent would be given in the form of rent subsidies, is recommended to the New York State Constitutional Convention in a report which has been filed by this association of New York City business men.

The report represents a long study on the subject of housing which was made by the Association's Special Committee on Housing, of which Thomas S. Holden, vice president of the F. W. Dodge Corporation, is chairman, and which contains among its membership several specialists in the construction, mortgage and finance fields.

Pointing to the staggering proportions which public debts of all characters have already reached and declaring particularly that New York City is in no position to finance an extensive housing program without endangering other needs, the Association's report condemns all the proposals now before the Convention which would permit the incurring of further public debts for housing. Instead, the Association sets forth a plan under which it is believed that private enterprise can itself solve the problem of wiping out the slums, if sufficiently encouraged.

The Association's rental subsidy plan is described in the message to the Constitutional Convention as follows:

"Under such a plan every tenant would be required to pay the full amount of the rent for his quarters. If he could not do so out of his own income, he could obtain rent relief from public funds for the difference between what he could pay and a standard minimum rent.

"Essential steps in applying such a rental subsidy plan would be:

1. Fixing minimum standards for dwellings and vacating all which did not come up to those standards. This would remove from the market those dwellings which were unfit for occupancy, benefit the owners of proper housing, encourage sound real estate practices, and stimulate indirectly the building industry.

2. Fix a maximum low rent scale to determine the figure above which no rental subsidy would be given and a minimum subsistence scale to determine the point at which a family would be eligible for rent relief.

3. Give a rental subsidy to families of low income so that they could efford to live in available apartments, meeting the minimum standards, at prices within the maximum low-rent scale or to pay enough to warrant the erection of an adequate supply of decent, sanitary dwellings in their vicinity by private enterprise. Review all grants quarterly or semiannually.

4. Pool all aid received from federal, state and local governments in one rent relief fund."

It is urged in the report that if the capital subsidy plans are carried through the tendency will be to develop a class of housing with which private enterprise cannot effectively compete and that therefore the participation of private enterprise in house building will be discouraged. On the other hand, the report goes into detail to describe the incentives which might induce private industry to solve the problem under the rent subsidy proposal.

It is the belief of this publication that a greater volume of building construction, with more employment of labor and larger purchases of building materials and supplies, will result from public policies that encourage *private home building and the investment of private funds* in economically sound rental housing than will be generated by public spending for housing, no matter how extensive.

"Home Value" Drive Sweeps Ahead

29 Campaigns Start in First 20 Days; 198 Newspapers Request Advertisements. Local Building Interests Give Enthusiastic Support in Effort to Create More Home Sales

By MARSHALL ADAMS
Managing Director, Producers' Council, Inc.

THIRTY days ago the unorganized building industry was groggy under the continuous punching received from the "thirty-minute experts" who have been expounding on "what's wrong with the building industry." Today, as this issue of the *American Builder* goes to press the organized building industry in 198 towns and cities is preparing a good offense as the best defense and in 29 communities has already launched a counter-offensive.

The "More House for Your Money" newspaper advertising program created and sponsored by the *American Builder* and launched and directed by The Producers' Council has provided a flag for the various factors interested in the building industry to rally around, as well as a plan of action to which all can subscribe and, jointly, can put into effect.

In community after community all over the land it appears that the building industry has come of age, and if the examples of selfless self-interest which we see appearing on a widespread front develop and grow in the direction in which they are at present headed, we may well expect to see some cohesion among a great number of factors that have a common stake in the progress of the building industry.

One of the first campaigns to get under way was in Sheboygan, Wis., where The Sheboygan *Press* of June 18 carried a full-page ad sponsored by a large group of building supply firms, builders, electrical people, building and loan and banking organizations, utilities and many others. This advertisement appeared in two colors, creating a smashing, powerful argument to local home owners to build now.

In Torrington, Conn., Mrs. Ella B. Mosier of the Iffland Lumber Company enthusiastically adopted the program and was joined by another local lumber dealer as well as by more than 30 local builders, equipment firms, financial and other interests. "We have met excellent cooperation in the campaign," reports Mrs. Mosier.

The swiftest moving program came from Charlotte, N.C., where the entire series of seven-page "More House for the Money Today" advertisements, described in last month's *American Builder,* were sold in one day, and the program inaugurated at once. In Ithaca, N.Y., the Master Builders' Association, as well as three banks, three dealers, the local building and loan association and other building interests united to support a program in The Ithaca *Journal.*

The Westfield *Leader,* in Westfield, N.J., has already published several of the advertisements with the support of a wide range of local building interests. In Washington Court House, Ohio, the Washington Lumber Company took an aggressive lead and sold the campaign. In Paterson, N.J., The Northern New Jersey Reserve Supply Company has underwritten the campaign in The Paterson *Call.*

Builders, dealers and numerous other building industry men have written to the *American Builder* and The Producers' Council endorsing this program and offering their support. Harry H. Watson, general contractor of Decatur, Ill., for example says, "I most heartily agree with you that this advertising should help to produce business. . . . I am certainly sold on the idea and believe I can get enough others to put it across."

In the short space of time that has passed since the program was announced the enthusiastic response shows conclusively that men of the building industry are beginning to realize that they must unite in some sort of aggressive offensive to combat the current widespread criticism of the building industry, building methods, and even the basic idea of home ownership itself.

It is probably because the industry is young and vulnerable that the theorists, the politico-economists and the people who thrive by pointing out weaknesses, have been having such a field day in connection with the problems of the home building industry.

Possibly it is because the automobile industry has grown up, that when Mr. Brown is considering buying an automobile, neither he nor anyone else inquires about the manufacturer's profit, dealer's discount, the salesman's compensation, the cost of labor that went into the automobile nor any of the details in connection with the product which he is interested in buying. What Mr. Brown wants to know is whether or not he likes the looks, the pick-up and the riding comfort of the automobile—its lowest price or, more often, the size of the monthly payments.

Long ago the merchant building industry, that is those builders who manufacture and sell houses, learned that the public's interest in a new home was exactly the same as its interest in a new automobile and these builders have been attempting to present new homes to the public in just this light—complete, ready for occupancy at so much down and so much per month. But while this was going on everyone and his brother has been concerning himself publicly with all the reasons why more houses were not being built and sold, and as a result were creating the biggest reason *why* more houses were not being built and sold.

However, if the last 30 days provide any experience on which to pass judgment, we would say that the situation is being cured in town after town all over the land.

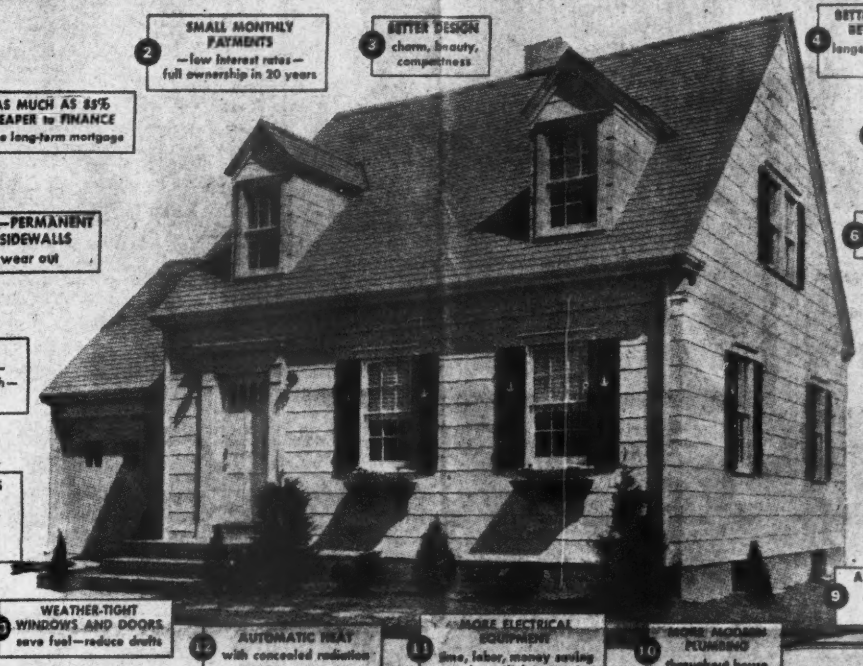
The announcement of this campaign brought an instantaneous response from newspapers from coast to coast. They were the first to receive the news. Newspaper after newspaper wrote, wired, telephoned or sent personal representatives, offering to put the power of the press back of this drive to acquaint the public with the bargain that exists in today's homes.

Closely following this, after the news began to spread, came communications from builders, contractors, de-

(Continued to page 84)

TODAY YOU GET 25% TO 40% MORE HOM

FOR YOUR MONEY


1 AS MUCH AS 33⅓% CHEAPER to FINANCE —one long-term mortgage
2 SMALL MONTHLY PAYMENTS —low interest rates— full ownership in 20 years
3 BETTER DESIGN charm, beauty, completness
4 BETTER CONSTRUCTION BETTER MATERIALS longer lasting—lower cost (A-1 lumber)
5 LOWER MAINTENANCE and upkeep costs
6 EXTRA BATHROOM and downstairs lavatory
7 ADDED LIVING QUARTERS basement and attic
8 MORE EFFICIENT KITCHEN mechanical equipment, convenient arrangement, built-in cabinets
9 AIR CONDITIONING clean, humidified, circulated air
10 MORE MODERN PLUMBING throughout house
11 MORE ELECTRICAL EQUIPMENT time, labor, money saving —better lighting, too
12 AUTOMATIC HEAT with concealed radiation
13 WEATHER-TIGHT WINDOWS AND DOORS save fuel—reduce drafts
14 COPPER AND BRASS PLUMBING non-corroding pipes, long-wearing gutters and down spouts
15 INSULATION against heat and cold— greater comfort and health— lower fuel bills
16 FIRE-RESISTANT—PERMANENT ROOF AND SIDEWALLS will never wear out

These 16 "EXTRAS" for Better Living

A 1938 Home offers greater value than at any time in history

...and actually costs less than the 1926 house

DID you know that the greatest single BARGAIN—the most outstanding VALUE in America today is a new home? Did you know that the 1938 house, like the modern automobile, makes the 1926 model practically obsolete due to improvements and new developments?

"John, darling, it's our Home! WE OWN IT!"

The thrill of a lifetime is when you build or buy a home. But it's more than that. You've just found the place where you want to live permanently. It's all yours. You may never have to move again. Nobody can ever raise your rent. You have purchased a share in the community, schools for your children, friends, social life, a new kind of interest and joy in a lawn or flowers, or a workshop in the basement. You have found a HOME.

You would expect that, with such improvements and scientific achievements, you would pay more for the greater livability, durability, charm and ease of buying.

But, actually, the 1938 home costs *less than* the home of 1926. One reason is new, lower cost materials, many of which are *actually* built at the factory—ready-made door frames, windows, kitchen and other cabinet assemblies, standard lumber, modern building products of many kinds that come in planned units for speedy, labor-saving assembly. In short, today's building materials dollar stretches further.

And here—in detail—is why you get 25% to 40% more real value than at any time in history:

Your house will be better designed. Great strides have been made by the better architects and builders of the country in designing homes to eliminate waste space and to make them more attractive.

Your house will be better built. It must pass Federal Housing Administration inspection for quality specifications, sound principles of construction.

Your house will be more comfortable. Insulation, improved heating plants, air conditioning have given the modern house comfort that was never dreamed of ten years ago.

Your house will be more economical. Many materials have been developed which have eliminated items of expensive upkeep that were looked upon as a necessary evil of home ownership just a few years ago.

Your house will be more efficient. It will have better kitchen planning, with new and improved labor-saving devices, streamlined, built-in fixtures that remove the word drudgery from housekeeping, and better room arrangement that eliminates many of the errors of construction that meant added burdens to the housewife.

Your house will be safer. Fire-resistant insulation and building materials, healthier atmospheric conditions; all help minimize the hazards of the past . . . *and with all this—*

> Your home will be far easier to finance. There never was a time when it was so easy to FINANCE a home. Long-term, low-cost financing makes it possible to pay for a new home out of a modest-size income, with low monthly payments like rent, on a plan that gives you full ownership of the house in 20 years. See your **Bank** or **Building** and **Loan** office for complete details.

Study the 16 specific points of improvement in the illustration. Go over them, point by point. Confirm these new developments and features with any of the companies listed in this advertisement. And you will say with us that *the 1938 house is the most outstanding value in America today.* Your architect, builder, realtor, lumber or building materials dealer will be glad to offer information and literature to verify the fact that you *get more house for your money today.*

For further information on the 1938 Home that can be YOURS, get in touch with any of the following—who sponsored this advertisement

BUILDING CONTRACTOR

MARTIN DE NY
2302 N. 6th St. Phone 4[illegible]

BUILDING SUPPLY DEALERS

CRYSTAL LAKE CRUSHED STONE CO.
Phone 2402

EBENREITER LUMBER CO.
1215 Erie Avenue Phone 211

HILDEBRAND LUMBER AND SUPPLY CO.
1711 N. 15th Street Phone 597

ROTH BUILDING SUPPLY COMPANY
Builders' Headquarters
Phone No. 2

PANTZER LUMBER CO.
110 South 14th St. Phone 181

SHEBOYGAN BRICK CO.
Fireproof Building Materials
Phone 2266

VAN DER VAART BRICK & BUILDING SUPPLY CO.
S. 13th St. and Clara Ave. Ph. 34[illegible]

ELECTRICAL

KOTLAR ELECTRIC CO.
Wiring - Fixtures - Appliances
1528 Calumet Drive Ph. 2772-W

PENN ELECTRIC CORP.
House Wiring - Fixtures
519 Penn. Ave. Phone 5232

GLASS

SHEBOYGAN GLASS CO.
Leaded, Plate and Window Glass
618 Center Avenue Phone 99-W

LOANS

BANK OF SHEBOYGAN
CITIZENS STATE BANK
SECURITY NATIONAL BANK
SHEBOYGAN BUILDING & LOAN ASSOCIATION
520 North 8th Street Phone 1000

HEATING - SHEET MET

PLUMBING

BRAUN-HERR HARDW. COMPANY
Plumbing - Heating - Sheet [illegible]
1526 Indiana Avenue Phone

HOLLAND FURNACE
936 Michigan Avenue Phon

KOEPKE SHEET METAL HEATING CO.
1726 Calumet Drive Ph. 43

KOHLER CO.
Plumbing fixtures, heating e[illegible]ment and electric plants on display in the showrooms.
High Street, Kohler Phone

SOUTH SIDE HARDWAR PLUMBING CO.
Heating - Plumbing - Sheet [illegible]
1612 S. 12th St. Phone 1[illegible]

TER MAAT RUDY HEAT AND AIR CONDITIONI COMPANY
1738 Calumet Drive Ph.

INSULATION

SPRINKMANN SONS C[illegible]
Eagle Rock-Wool Insulati
1109 North 9th St. Phone

MILLWORK

SHEBOYGAN WOODWORKING CO.
1201 Erie Avenue Phone 10[illegible]

PAINTING

SHEBOYGAN PAINT C[illegible] INC.
Factory-to-you-prices
10% to 20% Lower
804 N. 12th St. Phone

UTILITIES

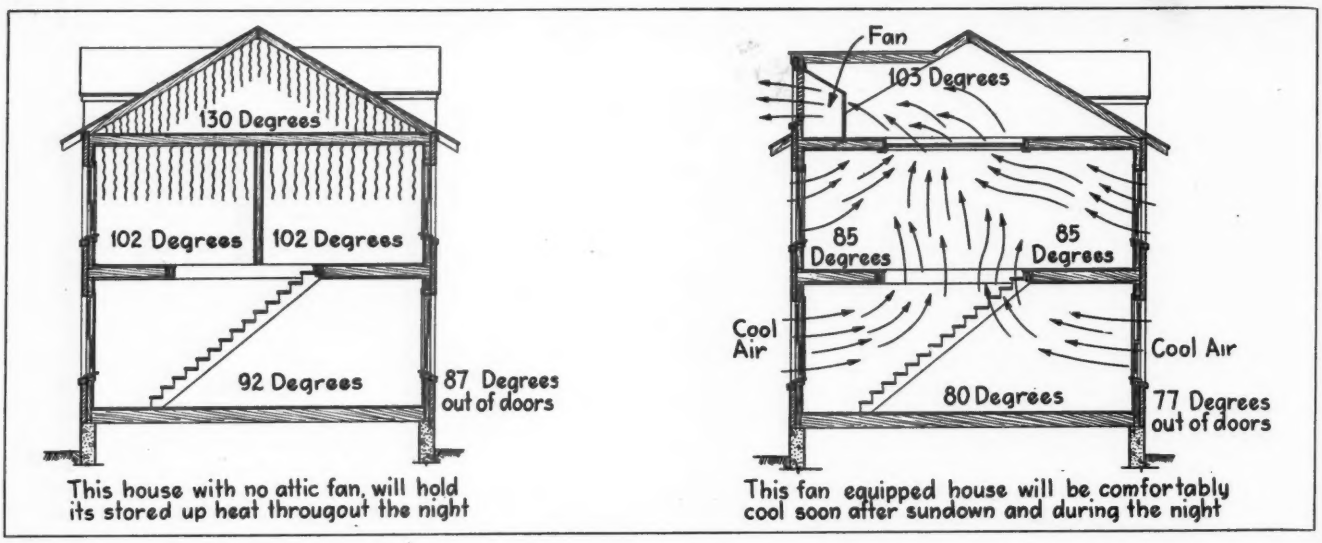
WISCONSIN POWER [illegible] LIGHT CO.
Telephone 5100

WISCONSIN PUBLIC SERVICE CORP.
Telephone 3050

YOU CAN BUILD *Better* FOR *Less* IN 193

Sheboygan, Ithaca, Charlotte, Westfield, Manhattan — —

SHOWN ABOVE is one of the first of the full-page newspaper advertisements sponsored by local building interests to combat high building cost propaganda and create home sales. A splendid assortment of Sheboygan, Wis., building men paid cost of the advertising in the local paper, using advertising copy and mats supplied by AMERICAN BUILDER and The Producers' Council. Seven advertisements are included in the series, all offered free to local building industry men who are anxious to create more sales by showing the high value of today's home.


130 Degrees
102 Degrees
102 Degrees
92 Degrees
87 Degrees out of doors
This house with no attic fan, will hold its stored up heat througout the night
Fan
103 Degrees
85 Degrees
85 Degrees
Cool Air
Cool Air
80 Degrees
77 Degrees out of doors
This fan equipped house will be comfortably cool soon after sundown and during the night

Attic Fans for Home Cooling

Contractors and Home Modernizers Will Be Important Factors in Popularizing Inexpensive Home Cooling Equipment

By LYMAN M. FORBES

IN THE home equipment field an old maxim might well be reversed to read, "Invention is the mother of necessity." In this field the inventor's "fool notion" of yesterday becomes today something that no self-respecting family wants to be without. Since 1865, in this land of mushroom markets there have been invented and adopted such present and past necessities as water hydrants, gas light, modern plumbing, central heating, electric lights, gas heaters, hardwood floors, electric refrigerators, and more recently, air conditioning. Now that the demand for winter air conditioning equipment is being satisfied, the next major market probably will develop in the field of summer cooling equipment for homes. Mechanical cooling units for home use are developing rapidly. Attic fans for summer cooling of homes likewise will be an increasingly important factor in this fast-growing field.

Contractors, builders, and home modernizers necessarily will play a major part in popularizing attic fans, because selling and installing are so closely related. Each installation involves details of home layout and construction with which they already are familiar. No duct work is required in a fan installation, yet each job calls for an understanding of room layout and location, the number and sizes of openings, and may involve the making and installing of grilles, louvres, construction of a suction box or plenum chamber, use of insulation, and awnings.

Each contractor, builder, and home modernizer should be well informed on attic fans, so that he can discuss them with clients and prospects. He should understand the seemingly unlimited market possibilities and the fundamentals of proper installation. This article gives the essential background that a building professional should have before he begins to collect additional information on the subject from individual manufacturers.

Attic fans take advantage of the fact that during summer months, night temperatures often are 10 to 30 degrees cooler than during the day. A fan carries away accumulated daytime heat and fills a house with cool night air so that occupants can sleep comfortably. The temperature of a house that has been adequately cooled with night air will remain appreciably below outside temperatures through much of the following day. If desired, the fan can be operated during the day, as well as at night, to provide increased circulation of air.

Fans have been used for years for cooling of homes, stores, offices, and factories. Their cooling effect has been demonstrated. The installations are comparatively inexpensive, and, therefore, within the reach of most home owners. Installation technique is fully developed, and is comparatively simple. Fan manufacturers have done all the necessary preliminary engineering work, so that only the simplest rule-of-thumb calculations are needed in order to make satisfactory installations. Most important of all, there is an intense, ready-made demand for summer cooling equipment.

When discussing installations with prospects or clients, attic fans should not be referred to as air conditioning equipment. "Comfort cooling," is a better and more accurate descriptive phrase. Fans circulate the air in a home, to be sure, but depend on outside temperatures for cooling and humidifying effects, and therefore, lack two essentials of mechanical conditioning units. Cryptic engineering terms such as cfm, back pressure, and airfoil section should be avoided. It is far better to use simple,

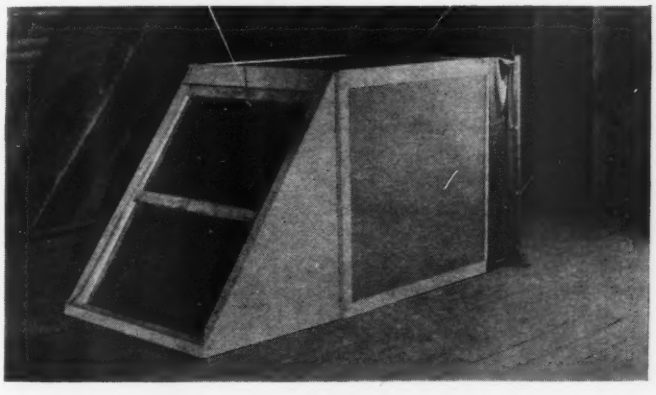
easily understood comparisons when telling what an attic fan will do for a home owner.

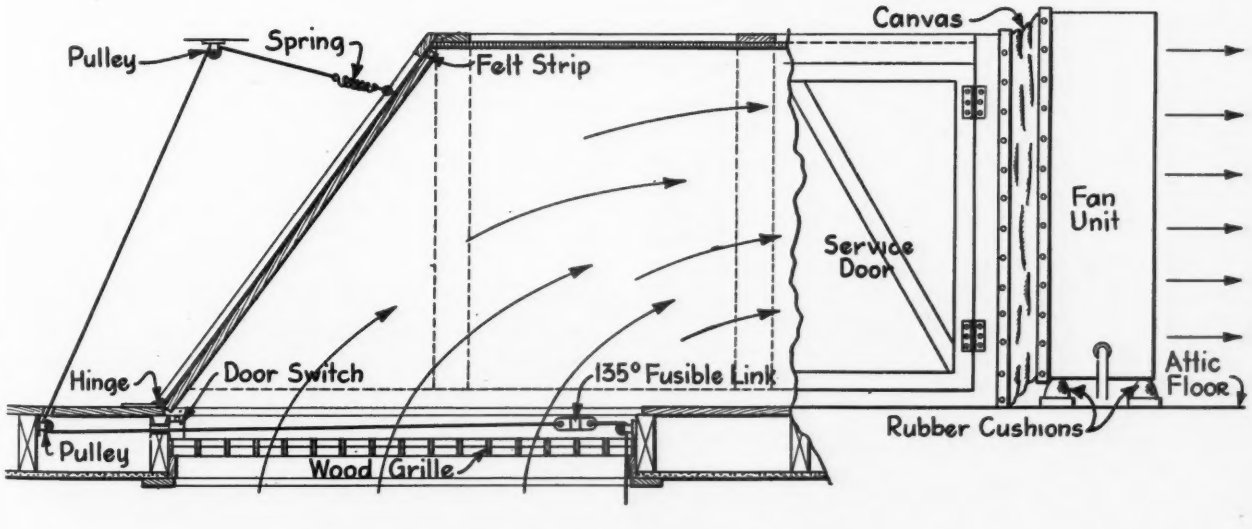
One of the first things to do when talking with a client or prospect is to give him an idea as to the kind of a fan you are talking about. You ask him to believe that a single fan can cool his whole house, yet the only fan he may know anything about is a little desk model in his office. Ask the prospect if he has ever stood on the ground at an airport in the backwash of an airplane propeller. If not, tell him how the blast of air sends hats and papers scurrying across the field. You are suggesting the kind of fan in which aerodynamic principles have been applied to the business of cooling homes. Tell him how ventilating and exhaust fans installed vertically on factory roofs blow birds "sky high" when they inadvertantly pass over the blast. He should understand that his puny desk fan moves only a few hundred cubic feet a minute, while the fan you are talking about moves thousands. An even better selling approach is to give a demonstration by showing an installation, either in a show room, or in a home.

Three factors affect a person's feeling of warmth; actual temperature of the air, its humidity, and its movement. Still air allows a blanket of heat and humidity to accumulate around our bodies, thus stifling the escape of body heat and raising the temperature. Moving air carries away body heat and moisture and lets nature's cooling system do its work. Sweat glands provide a cooling system for each individual. This system is crippled if the surrounding air is unable to absorb moisture. Air can hold only so much water, and unless it circulates, that around the body becomes saturated.

Almost everyone has experienced the stifling heat of an attic on a sunny, mid-summer day. Temperatures under the roof reach 110 to 130 degrees Fahrenheit. The roof surface is too hot to touch for long. The sun pours heat into a house in the same way that a hot-water bottle is filled. Rooms immediately below the roof become overheated and remain that way because the accumulated heat cannot escape by rising. Walls, furniture, and bedding store up heat, and the rooms become unbearable at night. When a hot-water bottle is emptied, it very soon cools off. Similarly, when accumulated heat is pushed out of an attic, and warm air in the rooms below is replaced every few minutes with a fresh supply of cool, night air, the entire house soon becomes comfortable.

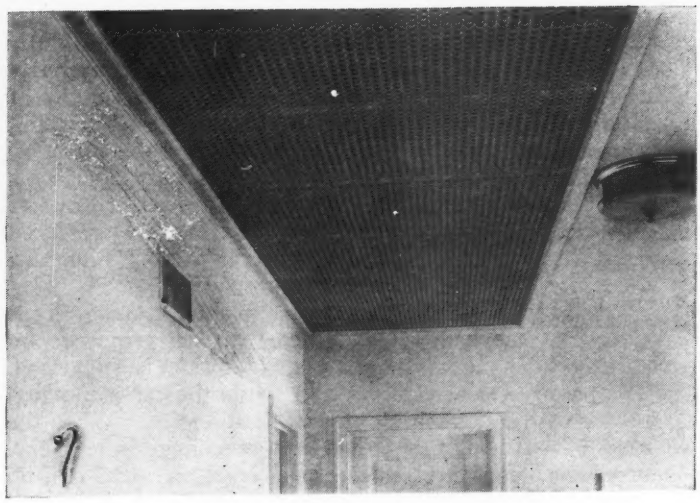
Attic fans have another easily explained cooling effect. Everyone has had the experience of being indoors on a hot, stuffy night. An automobile ride is suggested. The passengers are comfortable while the car is moving, because air is circulating around their bodies. When the car stops, although there has been no change in temperature, they soon feel uncomfortable. An attic fan, in addition to carrying off accumulated heat, sets air in motion in each room and provides the circulation that carries away body moisture and heat.

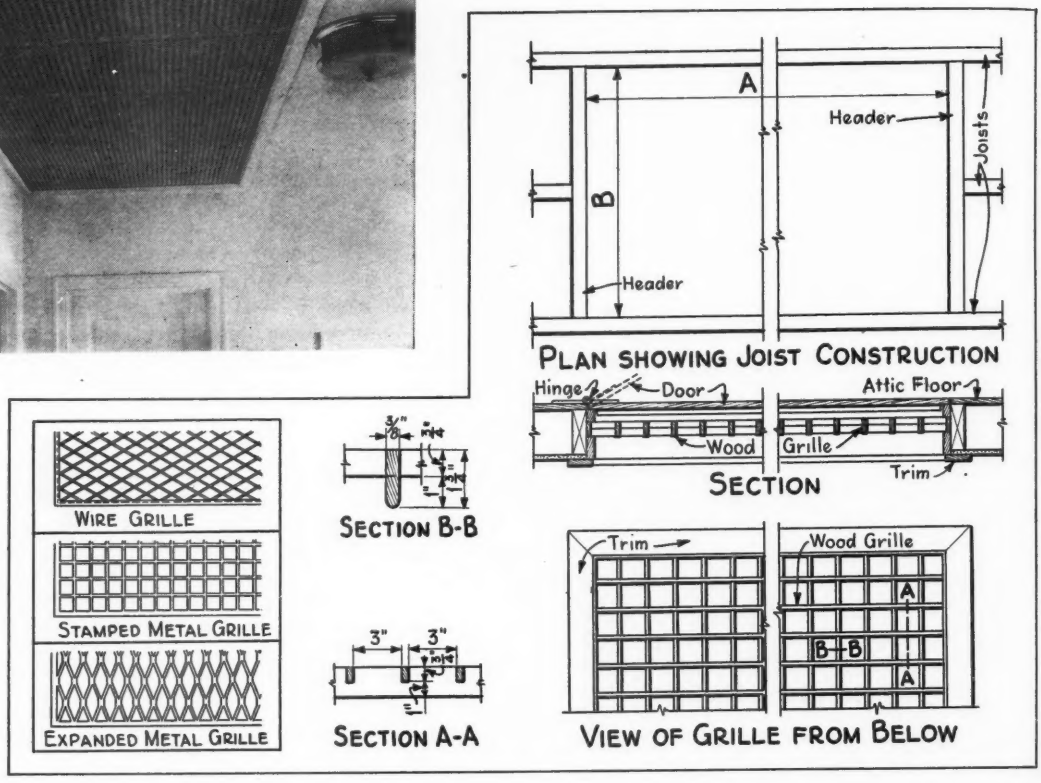




SECTIONAL DETAIL THRU GRILLE AND ATTIC SUCTION BOX

THE OUTLET of the suction box shown at the upper right discharges into an open attic. The cross-section shows construction details of one type of suction box. In this case a trap door, hinged to the attic floor, is opened and closed by a rope-and-pulley arrangement from the floor below. A fusible link in the line closes the door automatically in case of a fire. A door switch shuts off the fan when the trap is lowered. Fan unit is connected to suction box by a canvas duct, and is insulated from the floor by rubber cushions to eliminate vibration.





ABOVE: The attractive, inobtrusive ceiling grille in this hall indicates that it is a "comfort-cooled" home. RIGHT: Patterns of grilles with plenty of free area, and details of wood grille construction. The section shows headers set into attic joist, grille suspension, trim, and hinged trap door for closing the opening when fan is not in use.

Fan manufacturers have developed improved equipment to take care of every type of building and every condition that ordinarily will be encountered. Modern fans handle enormous volumes of air silently. In the past, high-speed, small-bladed fans were used to move large volumes of air. The blades moved so fast that they made a humming sound. The air stream also moved so fast that it made a noise. Vibration resulting from high speed was an additional disturbing factor.

On new models the blade sizes have been greatly enlarged. Fans for home cooling have diameters ranging from 24″ to 54″. Tip speed of the blades has been reduced to 600 revolutions a minute or less, so the blade movement is inaudible. Intake and outlet openings have been enlarged so that the air movement is reduced to 600 feet a minute or less. Modern fan bearings and motors are cushioned in rubber. The fan panel may be suspended by springs, or cushioned on rubber, and is joined to its suction box or louvres with canvas connectors, so that little or no vibration is transmitted to the building. Silent operation is a feature of cooling fans.

How to Figure Proper Capacities

A fan that is to be used for night cooling should give a minimum of one complete air change for an entire house every three minutes. Manufacturers recommend at least a three-minute air change in northern states, a two-minute change in central regions, and a change every minute in the South, where daytime circulation of air is desired. References to a one- two- or three-minute air change in a house might be confusing to some prospects. A more easily understood way of describing an air change would be to compare it with the very simple process of filling and emptying a pitcher each minute or two.

Fan capacity is determined merely by figuring the cubage of a house and deciding how often the air should be changed. If a one-story house is 30′ wide and 40′ long, and rooms are 8′ high, it contains 9,600 cubic feet—approximately 10,000. A fan with a capacity of 5,000 cubic feet a minute will give a complete air change each two minutes. If it is desired to give a one-minute air change, for daytime circulation, a fan of 10,000 cubic feet capacity should be installed. Data on capacities and air changes can be obtained from manufacturers.

Considerable variation will be found in the capacity claims made for different fans. A Standard Code for testing and rating fans was developed in 1923. It is known as the "still box" method. A fan tested by this method might show a capacity of 7,000 cubic feet a minute. When tested by the "inlet anemometer" method it might show a capacity of 8,000 cubic feet, and by the "discharge anemometer" method might register 10,000 cubic feet. Fans tested by the still box method, or Standard Code are identified by the following seal:

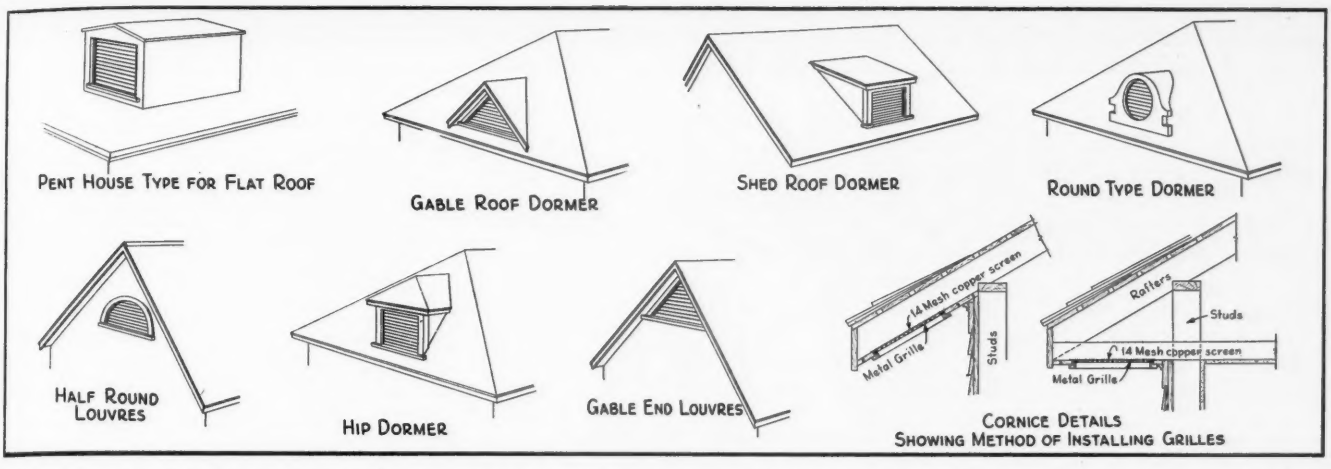
CERTIFIED RATINGS

Air deliveries are in accordance with Standard Test Code for Centrifugal and Propeller Fans, adopted jointly by the National Association of Fan Manufacturers and American Society of Heating & Ventilating Engineers.

After determining proper capacity of the fan to be installed, the next step is to figure what course the incoming and outgoing air should follow.

If the house to be comfort-cooled has an attic stairway, no additional opening need be provided. The fan may be installed in the door so that it discharges into the attic. Or the fan may be connected with louvres in the attic,

Readers desiring information on attic fans and equipment, including sizes, capacities and installation details from leading manufacturers, may write Mr. Forbes, c/o American Builder, Chicago.



LOUVRES used with attic fans should be large enough to permit free passage of air, according to fan capacities. Louvres are placed in gable ends or dormers designed according to attic size, roof pitch, and architectural lines of the house. Total free area of louvres should equal that of the ceiling grille used inside. When louvre area is inadequate, additional openings may be cut out under eaves, as shown. These openings may be screened to keep out birds and insects. Sizes of under-eave openings should be figured on a basis of 50 per cent free area when tightly woven screen cloth is used.

so that it draws air up the stairway and from the attic itself, which would thus serve as a plenum chamber.

If there is no attic stairway, it will be necessary to install a grille in the ceiling of a hallway or closet, opening into the attic. If a large volume of air is to be handled, two grilles may be necessary. The grille may be either a wood grating, of the type used for cold-air returns on warm-air furnaces, expanded metal, or a factory-made product supplied by some fan manufacturers. The grille should have at least 80 per cent free area (8 square feet of free area in a grille with a total area of 10 square feet.) There should be one square foot of free area for each 500 cubic feet of air per minute. A grille for a fan with a capacity of 5,000 cubic feet a minute, should have a total free area of 10 square feet.

How Air Movements Are Controlled

An open camp fire is romantic, but very inefficient for either heating or cooking, because heat of the flames is dissipated in all directions, and is blown about by every passing breeze. The same flames in a crude stove would accomplish much more, because the heat is controlled and directed. Similarly, if an attic fan were operated in the open it would be comparatively inefficient. Instead, the fan is placed inside a vent box, so that direction and size of the air stream can be controlled and directed.

Attics are of two types, either "open" or "tight." The former, found most frequently in the South, are built with open eaves. In this type of attic, the fan may be connected direct to the ceiling grille by means of a suction box. The fan discharges into the attic. When this is done, the attic is "under pressure." Air escapes through the eave openings, and through louvres installed in gable ends or dormers. The movement of air discharged by the fan helps to "flush out" the attic space.

A tight attic is one in which the eaves are sealed. The fan may be installed on an outside wall, so that it discharges directly into louvres. The fan is not connected directly with the ceiling grille. In an installation of this type, the attic itself serves as a plenum chamber. The fan draws off air from downstairs, through the ceiling grille, and also carries away heat in the attic.

The fan may be placed in the center of a tight attic, rather than on an outside wall. When this is done, the louvres should have a free area equal to that of the intake grille, or additional openings may be cut through soffits from the outside, so as to make an open attic. Soffit openings should be covered with ¼" wire mesh and also may be covered with screen cloth.

Louvres may be of a fixed type, either wood or metal, or may be "automatic." Openings of the latter are covered with overlapping horizontal shutters, usually of lightweight aluminum. They are hinged along the upper edge, so that they open when the fan starts and close when it stops, thereby shutting out wind, rain, or snow when the fan is not operating. Automatic louvres should not be used when a fan is placed in the center of an attic. Use automatic louvres only when the fan is connected with a duct, within one foot of the louvres.

An accompanying illustration shows construction details of a suction box that is connected with a ceiling grille. The discharge end may be connected direct with outside louvres, or may be open, if it is desired to put the attic under pressure. Suction boxes are made to suit the individual conditions found in an attic. Some fan manufacturers furnish material lists and details. In some cases, the fan shipping case is used to construct the suction box. In still other cases, parts may be furnished for assembly. In the case of flat roofs, as in apartment buildings, or in extremely low attics, the suction box may be a "pent-house" type.

How to Build a Suction Box

A few general principles should be observed when building a suction box. A cross section of the box should be as large as the intake grille opening and discharge opening. If air moves through the box too rapidly, it will produce a disturbing rushing sound. All framing members should be placed on the outside of the box. If placed inside, they will retard the air movement and may set up disturbing cross-currents. A sound-absorbing material, such as rigid insulating board, is recommended for lining.

Some manufacturers supply automatic ceiling grilles that close when the fan is not in motion. In case an open grille is installed, the opening may be covered by a manually operated trap door, hinged into the back of the suction box, or to the floor. This cover can be lowered by means of a rope and pulley from the floor below. Some local fire codes may require that a fusible link be inserted into the line so that the door will close automatically in event of a fire inside the house. Some fans are equipped with an automatic shut-off that stops the

motor when the trap door is lowered. Both fan unit and suction box may be insulated from the attic floor by means of rubber cushions, or may be suspended from the rafters.

A fan that is used only for night cooling usually is turned on in the late afternoon or early evening. In order to get the maximum cooling effect, the fan usually is shut off during early morning hours, or shortly before sunrise. Fans may be equipped with two-speed motors and manually operated controls, so that the unit will operate at full speed during early evening hours, and will turn over slowly at reduced speed during sleeping hours. An automatic time-switch can be supplied at a slight additional cost. This switch can be set when the fan is turned on, so that it will operate any desired number of hours, then will shut off automatically. The device consumes no current and involves no operating expense. A more recent refinement is a thermostatic control that can be used in conjunction with an automatic time-switch. This thermostatic control will shut the fan off in case there is an unexpected or extreme drop in temperatures that might make the house too cool for comfort. If no such change occurs, the time-switch will turn off the fan at the scheduled hour.

Each house has what is technically known as a "cooling load." This is nothing more than a measure or indicator showing the amount of heat that must be absorbed or carried away. A loosely built, uninsulated house quite naturally has a heavy cooling load. A fan must work harder or longer to cool such a house than it would in a tight, well insulated one. A number of things can be done to reduce the cooling load in a house and thereby make it more comfortable. Anything that will keep out heat is helpful. Fans and insulation are natural allies.

Fan manufacturers strongly recommend the use of insulation in conjunction with their equipment in houses that are to be comfort-cooled. Fans give better results in an insulated house than in an uninsulated one. Insulation prevents intense heat from penetrating into a house. Fan manufacturers maintain that insulation alone will keep out heat for a reasonable time during a hot spell, but that once heat has penetrated an insulated home, its escape is more difficult. In cases of this kind, a fan installation makes the insulation job more effective. The home owner who wants maximum comfort should install both insulation and fan.

Operative builders have discovered advantages of attic fan installations as a means of increasing the sales appeal of their houses. Many fine talking points can be developed around inexpensive, comfort-cooling equipment in a house that is offered for sale. Cost of installations are more than offset by added value and sales appeal. One middle-western builder reports that he is putting attic fans into 51 new houses scheduled for erection this year, and fan manufacturers report similar interest on the part of other builders.

The question of operating cost will arise when attic fan installations are discussed with clients and prospects. There are a number of ways in which this question can be answered. The only operating expense involved is cost of electricity for the fan motor. One way of describing operating costs in easily understood terms is to say that it will cost no more to run the fan than it costs to run an electric refrigerator. Cost also can be expressed in terms of daily power consumption. Estimates will range from 4c to 13c a day, depending on size of the fan and the number of hours it is operated. Still another way is to give the operating cost in a lump sum for an entire cooling season. The average fan installation can be operated for $5.00 to $7.00 a season, according to manufacturer's estimates. Original cost of the fan installation will be about that of an electric refrigerator.

In addition to almost unlimited sales possibilities in single-family homes, cooling fans should be installed in many flat-roofed apartment and hotel buildings. The upper stories of these structures often become uncomfortably hot in summer, and for that reason are less attractive to tenants. Apartments and small hotel installations can be handled as easily as home jobs.

Another large and untouched market is in the commercial field. There are unlimited opportunities for fan installations in restaurants, bakeries, barber shops, beauty parlors, cleaning and pressing shops, funeral homes, recreation halls, theatres, clubs, offices and stores. Industrial applications can be made in laundries, garages, factories and warehouses.

There are plenty of opportunities for contractors, home modernizers, and builders in the attic fan field. In residential buildings alone, the estimated potential market is nine million attic fans. The market is opening up very fast. The building professionals who will profit most will be those who get into this rapidly growing field now.

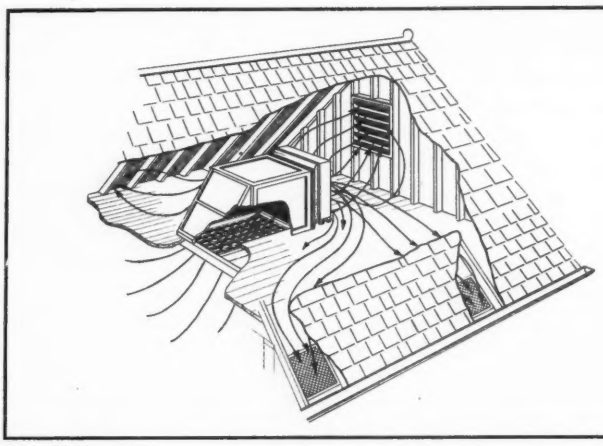
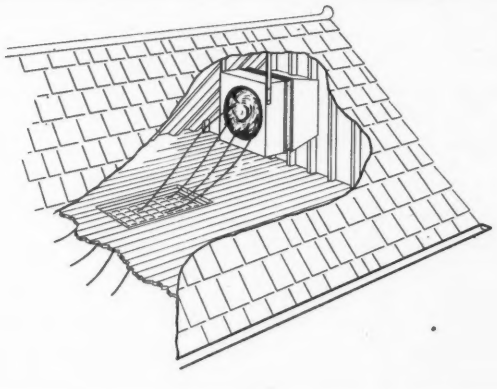


DIAGRAM showing air-movements when fan is placed in center of an open attic. Suction box is connected with ceiling grille below. Air discharged by fan flushes out the attic and escapes through louvres, under-eave openings, or both. Fixed louvres should be used in this type of installation.



THIS diagram shows air movements when fan is placed close to an outside wall and connected direct to louvres by a duct. This type of installation is used in tight attics. Fan is not connected directly to ceiling grille. The attic serves as a plenum chamber. Fan unit is suspended from rafters, others are installed in side walls.

Correct Details Give Charm and Value to Homes

If properly styled to the type of house, details can add lasting enjoyment and greater salability. Following Home Design pages show examples of fine detailing.

THE INTERIORS shown on this page are found in a New England Colonial type house designed by Architect Maxwell A. Norcross and constructed near Cleveland, O., by Olsen and Johnson, builders. The equally attractive and well designed exterior, together with floor plans, appears on the next page. The view above of the fireplace in living room as seen through the dining room doorway shows the well detailed Colonial mantel. The stair hall at the right presents a graceful balustrade leading up over the round headed door to the small rear hallway.

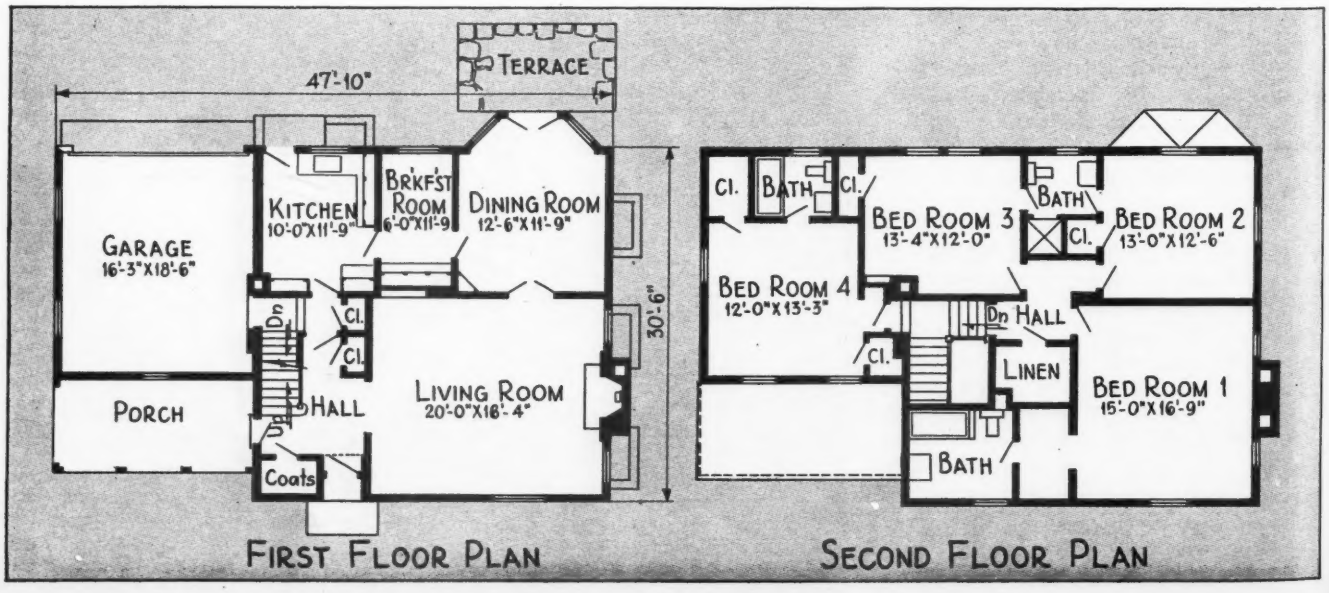
NEW ENGLAND COLONIAL IN OHIO

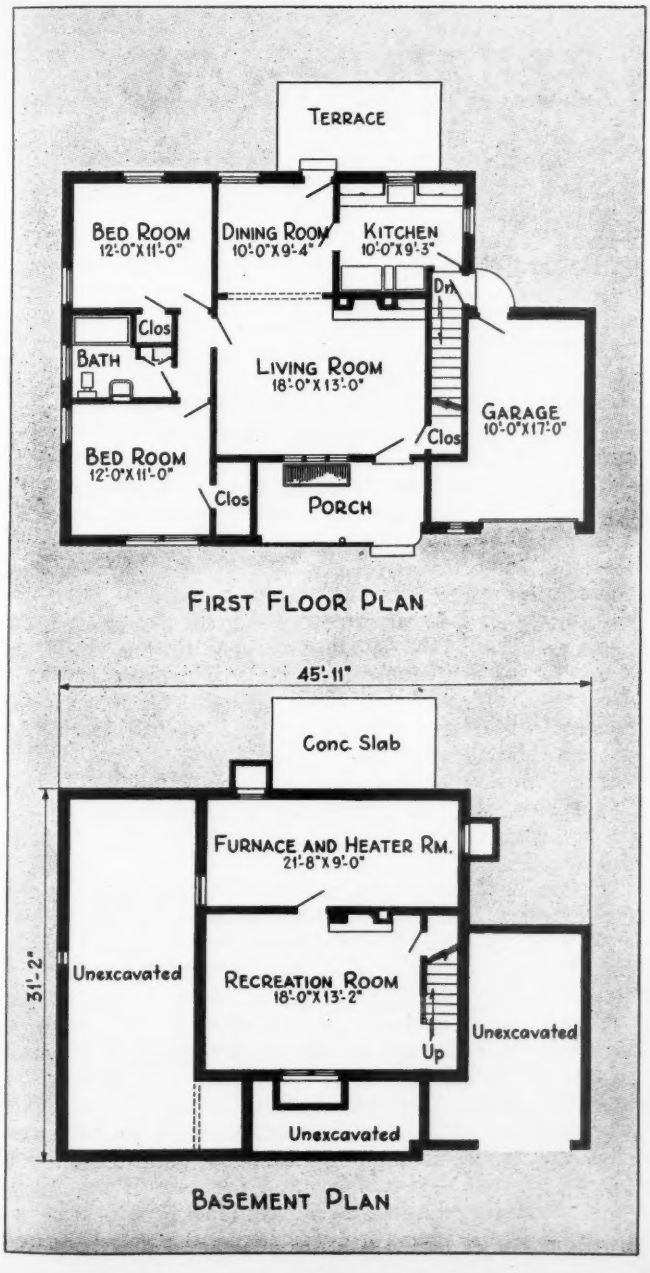
AMERICAN BUILDER TruCost FIGURES FOR THIS HOUSE ON PAGE 52

Maxwell A. Norcross, Architect; Olsen & Johnson, Builders

SET BACK on a wooded lot, this picturesque white shingle and stucco home near Cleveland is most attractive. The slag drive winding across the little culvert bridge in keeping with the house adds to the effect. Fine detailing is found inside an dout as shown in the views above and on the preceding page. Plans appear below; front and rear flagstone terraces allow pleasant outdoor living in the shaded yard; adequate facilities are arranged to comfortably house a good-sized family.

Construction features include: Perma-Stain shingle roof; Toncan gutters and flashings; rock lath interior, metal lath exterior under stucco; rock wool insulation in walls and ceilings; Overhead garage doors; Bryant winter air conditioning; select white oak floors throughout; wood rail, stained oak treads, gum risers painted white on stairs; all copper piping; linoleum floors, Linowall wainscot, Sanitas wall and ceiling in bathrooms; Standard plumbing fixtures; white pine exterior trim; pine and birch interior trim; electric range and refrigerator, built-in kitchen cabinets; basement play space.





ATTRACTIVE HOME WITH SIMPLE LINES

Built in Wichita, Kans.; M. H. Pierpont, Contractor; R. M. Harmon Jr., Architect

THIS ATTRACTIVE small home, built in Wichita, Kans., has five rooms—living room, dining room, kitchen and two bedrooms—compactly laid out along efficient modern lines. Exterior is brick veneer painted white; roof is of wood shingles and the floors in all rooms are of hardwood; all dimension lumber is Douglas fir. The floors in the bathroom and kitchen are covered with Armstrong's linoleum, as are the kitchen sink and cabinet tops. The bathroom walls have a wainscoting of Armstrong's wall covering with a one-half inch chromium band at the top, and wallpaper above. The kitchen walls are of painted canvas; other rooms have wallpaper. The bathroom is equipped with Crane fixtures; heating is a forced air system.

AMERICAN BUILDER TrueCost FIGURES FOR THIS HOUSE ON PAGE 52

THE HOUSE is equipped throughout with Venetian blinds. Recreation room has Celotex 16 x 16 beveled board ceiling and a fireplace. The garage is lined with Celotex board for both ceiling and sidewalls. It has an upward-acting garage door. The bedroom windows are located off-center to give more space for furniture. A convenient linen closet is part of the bathroom equipment, while the bedrooms have large, electric lighted clothes closets. The living room has a good fireplace with a modern type of wood mantel and a large round mirror above it. The front porch, between garage and bedroom, has a cast iron railing.

AMERICAN BUILDER
TruCost FIGURES
FOR THIS HOUSE
ON PAGE
52

HARTFORD'S all-gas demonstration home, built by R. G. Bent in High Ledge, from plans by Architect A. Raymond Ellis, features complete gas equipment, dry-wall finish.

"So Good, People HAVE to Buy"

Builder of Hartford All-Gas Home Sets Fast Pace Despite Depression. 15 Houses Under Construction in Landscaped "High Ledge" Tract

WHILE architects and draftsmen in various parts of the country were scratching their heads over futuristically inclined designs for the American Gas Association Competition, a practical builder and an experienced architect in Hartford, Conn., were actually building the first house to be officially opened under this program.

In 45 days the R. G. Bent Company of Hartford built a modern, fully gas-equipped house in its new "High Ledge" development. This was formally opened with appropriate ceremonies June 16. The house was designed by Architect A. Raymond Ellis of Hartford.

GEORGE GRAY and R. G. Bent, who built model home, shake hands on completion of job in record 45 days.

The opening of this striking demonstration home culminated weeks of vigorous work by the R. G. Bent Company in its new 48-acre High Ledge project in West Hartford. In the face of a new depression, this firm has aggressively stepped out to sell more homes. On June 15, 15 were under construction, of which ten were on contract and five on speculation. As R. G. Bent put it, "We are making these homes so good that people *have* to buy them. We feel this is a good time to build and a good time for people to buy. We are not afraid of the 'recession'—we are going ahead. Our prices are low and our home values high, and we have a product for which there is a big demand."

Since work first started on the new High Ledge tract this spring, 50 lots have been sold, of which a large percentage were to owners who are planning to build this year.

R. G. Bent and his associates are both builders and developers. They have done several earlier developments and, what is somewhat surprising, are also well known for large-scale commercial and industrial construction, as well as the building of expensive large homes.

A new idea that has a great appeal to Hartford home lovers is the landscaping and land planning development of the High Ledge tract. Thomas H. Desmond, well known landscape architect and land planning consultant, was retained to lay out the tract with attractive curved sites, an artistic arrangement of houses and to supervise placing of trees, shrubbery and the beautifying of the property. In addition, Mr. Desmond provides a complete landscape plan for every home, the price of which

FLAGSTONE terrace, outdoor fireplace and carefully placed shrubs are part of the landscaping work of Thomas H. Desmond, land planning consultant who not only laid out the development but prepared individual landscape plan for each house.

is included in the cost of the lot. This gives the home owner a definite plan which enables him to beautify his property at once or progressively over a period of years.

With the building and sales program going ahead nicely this spring, the opportunity was offered the R. G. Bent Company through the cooperation of the local Hartford Gas Company to tie in with the national program of the American Gas Association. Bent was quick to appreciate the value of the local and nation-wide publicity attached to this program, and by taking quick action became the first to build a demonstration home.

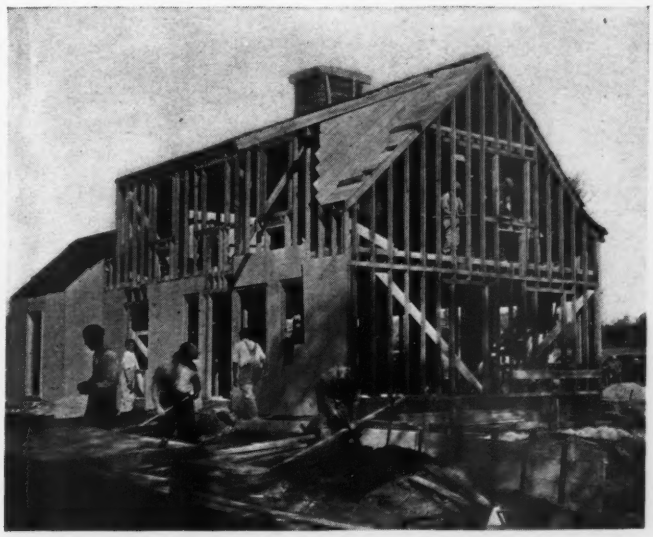
This first all-gas home is an eight-room Colonial house, with recreation room and two-car attached garage, designed by Architect A. Raymond Ellis. It is fully equipped to demonstrate the use of gas fuel for the four principal functions—cooking, refrigeration, water heating, house heating. In addition, the house is equipped with gas laundry equipment, including an ironer and dryer, and two gas fireplace heaters.

Among numerous interesting features of construction and equipment is the use of the dry-wall principle, eliminating plaster and thereby shortening the time of construction. The house was completely built in 45 days. Exterior walls were covered with Homasote weatherproof insulating building board, and inside walls were finished with large sized panels of the same material. By skillfully planning the use of the board, joints were eliminated. The inside paint finish was applied direct to the building board, providing an attractive cheerful interior that has unusual warmth and sound-absorbing quality. The elimination of plaster not only speeded up the job but reduced swelling and shrinkage of lumber which normally result from the introduction of tons of water during the plastering process.

The house designed by Architect Ellis for this first demonstration home has an architectural quality that is very pleasing. It is of simple traditional Colonial design with exterior of narrow clapboards. The entrance hall is spacious without being wasteful, with a coat closet conveniently placed. The living room has an excellent exposure on three sides, with a Colonial mantel and mirror. Adjoining the living room is a small library or study, with bookcases from floor to ceiling on each side of the windows. This little room is an extremely popular addition to the house and is one of its most important features according to the salesmen who have shown customers through. A door at the back of the living room leads to a back hall upon which opens a small lavatory, the basement stairs, as well as the kitchen and rear entrance doors.

A unique feature of the kitchen is the manner in which an oval-shaped work counter projects out into the room, separating the work area and providing space for a breakfast counter and seat. The breakfast counter is covered with cheerful red linoleum, and the seat upholstered in red leatherette material. The kitchen walls are finished with a smooth, washable composition product in an attractive tone of yellow. The gas stove, refrigerator, sink and cabinets are arranged efficiently and attractively.

Upstairs there are three bedrooms and two baths. Here again, the plan is unusual in that there is a connection between the small bedroom, which is the child's



DRY-WALL CONSTRUCTION, using large sheets of Homasote insulating and building board inside and out, was featured in the Hartford demonstration home. It was erected in 45 days.

Modern Gas Kitchen

LATEST MODEL gas range with monel metal top is designed to fit flush against built-in cabinets. Kitchen has built-in monel metal sink, electric dishwasher, ventilating fan and an unusual work counter arrangement, illustrated in foreground, which separates work area from dining alcove,.

room, and the maid's room and bath located over the garage. In a clever way, back stairs have been worked in from the maid's room to the back hall off kitchen.

Associated with Rupert G. Bent in the development of the High Ledge project is George S. Gray, an active member of the Greater Hartford Builders' Association. Gray has developed an advertising theme that is attracting much attention in the Hartford area. A series of advertisements has been prepared, stressing the environment and appeal of the High Ledge area. One of the first of these advertisements appeared with the caption, "An Adventure in Contentment." Another one appeared with the title, "A Heap of Living." This advertising is built around the fact that the High Ledge tract has a setting of great natural beauty with fine vistas and beautiful rolling countryside. The price range of the houses from $8,500 to $12,500 makes it possible for persons of moderate means to enjoy an exceptionally desirable environment.

From its original landscaping plan, clear through to the selling program and the opening of the first all-gas demonstration home, the High Ledge development is one that has the earmarks of setting a fast and successful pace despite the recession.

Basement Recreation Room

PINE-PANELED walls, asphalt tiled floor, a ventilating fan and ship's lantern lighting make this basement recreation room an attractive spot. The fireplace is equipped with a gas-burning "coal fire" that gives a warm, cheerful effect.

Planning and Specification Details–Hartford Gas Home

PLANS—Architect, A. Raymond Ellis, A.I.A. Traditional Early American architecture; narrow clapboards with corner boards, painted white; blue blinds; blackish-gray roof shingles.

WALL CONSTRUCTION—Homasote weatherproof insulating building board in large sheets used for exterior sheathing and interior finish, applied according to "Precision-Built" method developed by Homasote.

LUMBER—Hartford Lumber Co.

HEATING—Bryant Model 255 gas boiler with 1-pipe hot water system, Thrush circulator, Minneapolis-Honeywell controls, Richvar recessed radiators.

HOT WATER—American-Bosch Kompak automatic-storage type gas water heater. Has 32-gal. copper ball tank.

PLUMBING—Eljer bathroom fixtures.

INSULATION—Side walls and ceilings insulated with Balsam Wool sealed blanket-type insulation by Wood Conversion Co.

TILE—Bathroom and kitchen tile by Marsh Wall Products, Inc., featuring modern smooth surfaces in color.

GARAGE DOORS—Stanley "Roll-Up" doors, with spring balance, cylinder lock.

GAS RANGE—Magic Chef, new model divided monel-metal top stove, with flush-type construction with built-in cabinets.

HARDWARE—Colonial, dull-chromium finish hardware by the Corbin Hardware Co.

ROOF—Blackish-gray Colonial type asphalt shingles by U. S. Gypsum Co.

FIREPLACE EQUIPMENT—Living room fireplace has Homestead birch-log, gas-burning unit. Recreation room has Homestead "Coalfire," radiant type unit made by Homestead Heater Co.

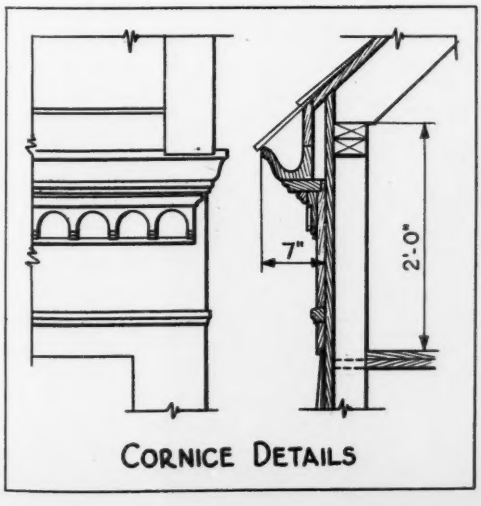
LAUNDRY EQUIPMENT—Thor Model 99 gas-heated ironer and Model 110-CL gas-heated clothes dryer. Bendix washer by Hurley Machine Division, Electric Household Utilities Corp.

TELEPHONES—Built-in conduits provide space for 4 telephones.

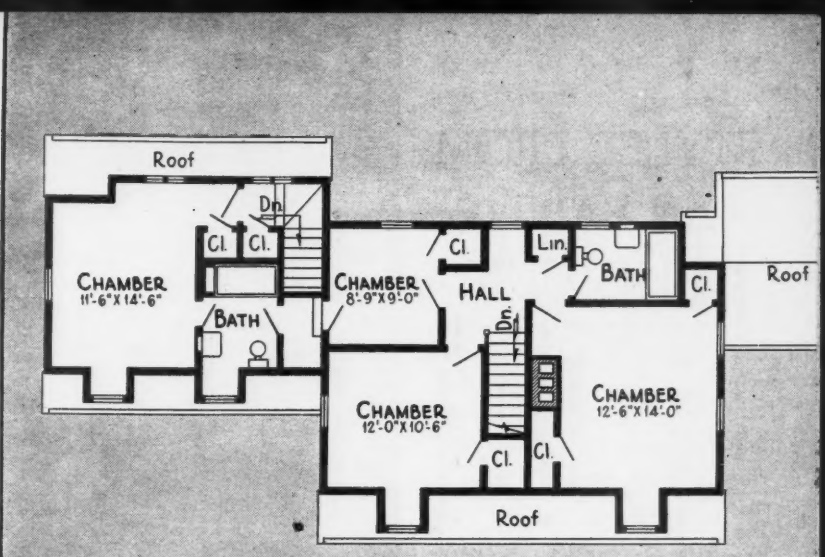
REFRIGERATOR—Model J-600, 6 cu. ft. Servel Electrolux gas refrigerator.

DISHWASHER AND SINK—Westinghouse Electric & Mfg. Co.

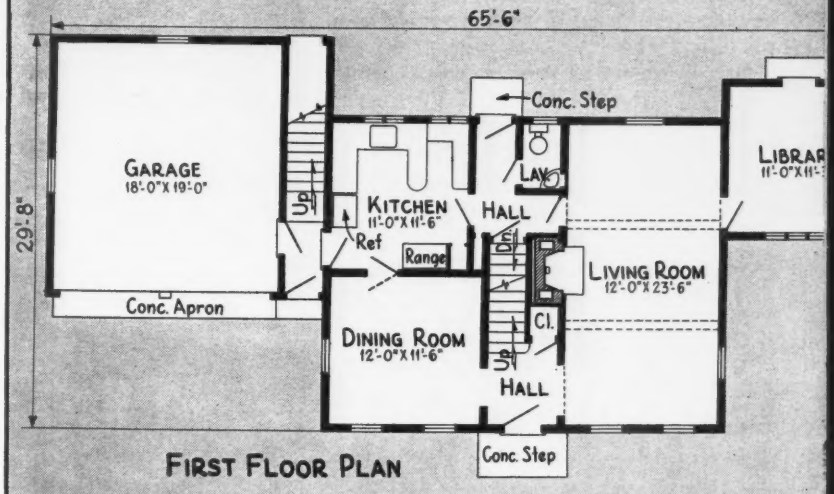
AMERICAN BUILDER
TRUE COST FIGURES FOR THIS HOUSE ON PAGE
52



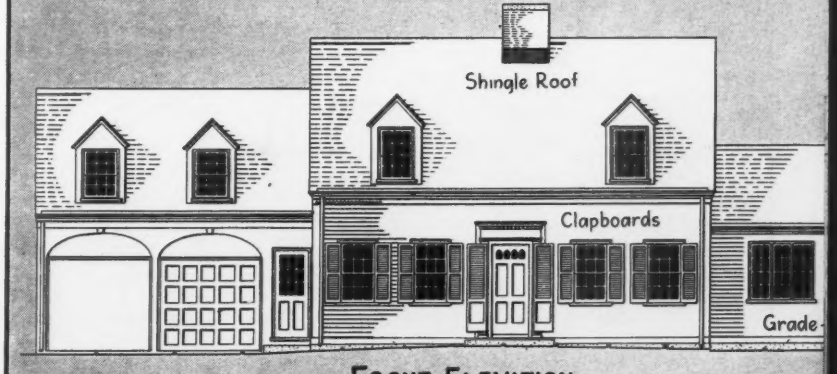
CORNICE DETAILS



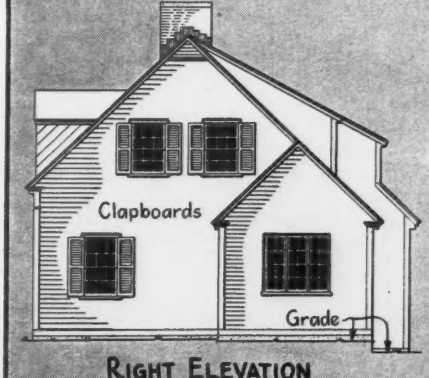
SECOND FLOOR PLAN



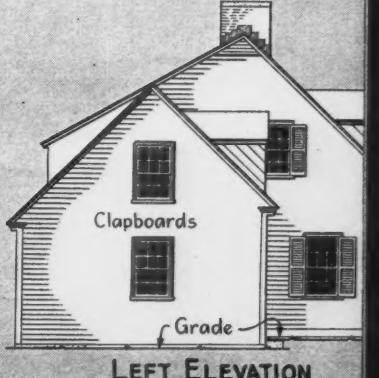
FIRST FLOOR PLAN



FRONT ELEVATION



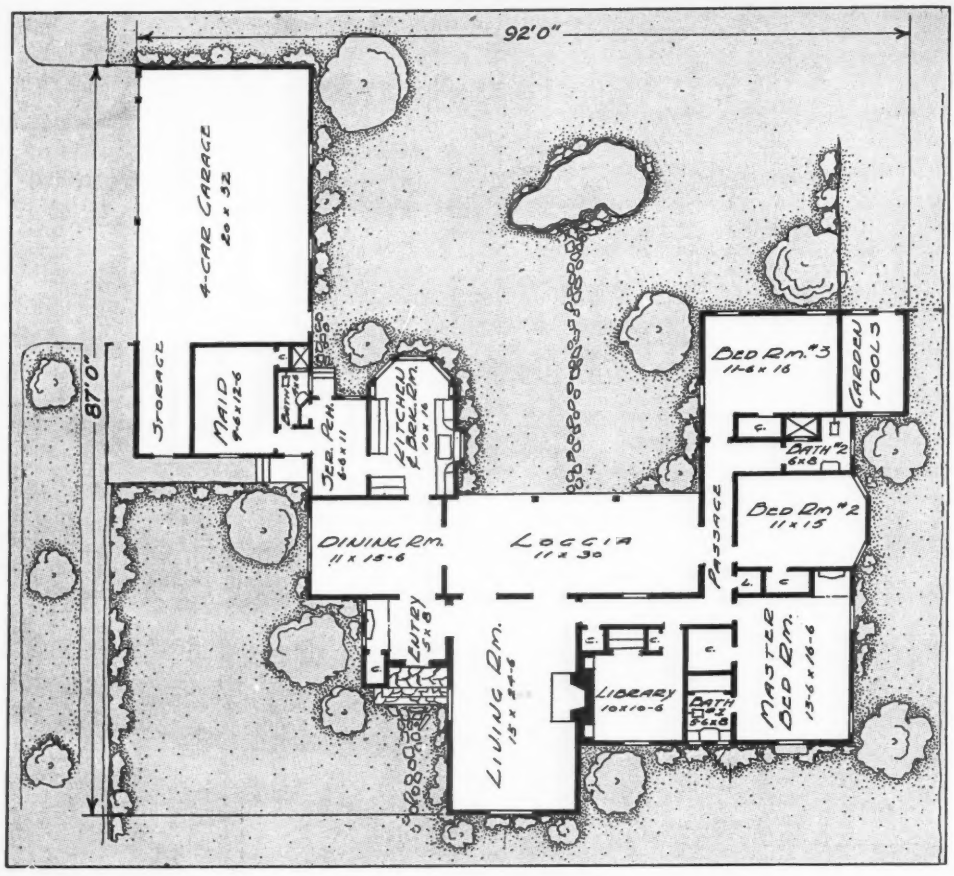
RIGHT ELEVATION



LEFT ELEVATION

STYLED FROM AN EARLY CALIFORNIA RANCH HOUSE

THE attractive loggia at the rear of this home in North Hollywood, Calif., carries out the early California ranch-house pattern of a garden patio; Arthur E. Harvey, Los Angeles, architect and builder.



THE HOUSE as seen below takes on a set-back appearance with the rooms, all on one floor, jutting out beyond each other to provide plenty of sunlight. Floor plan allows for the following rooms: Living room, entry, library, master bedroom, two other bedrooms with bath between; dining room, kitchen and breakfast room, service porch, maid's room and bath. Living room faces north and east, with French doors opening on rear dining terrace shown above.

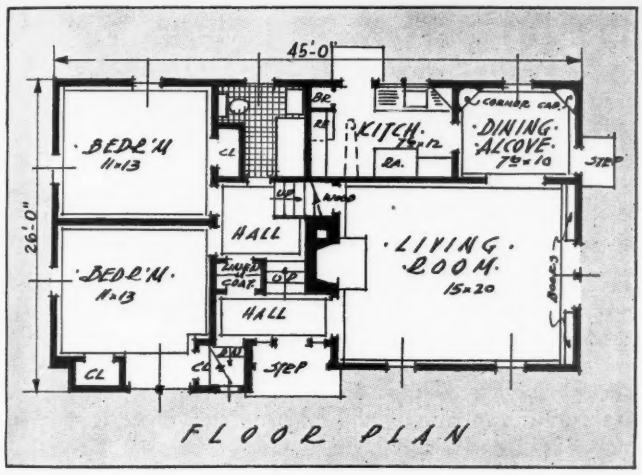
Construction features include concrete foundation and reinforced footings; exterior of frame, white stucco and knotty pine; cedar shingled roof and a clay tile ridge; redwood window grilles and shutters; oak floors; Standard plumbing fixtures; Celotex insulation; Johnston forced air unit heating system.

AMERICAN BUILDER TRUE COST FIGURES FOR THIS HOUSE ON PAGE 52

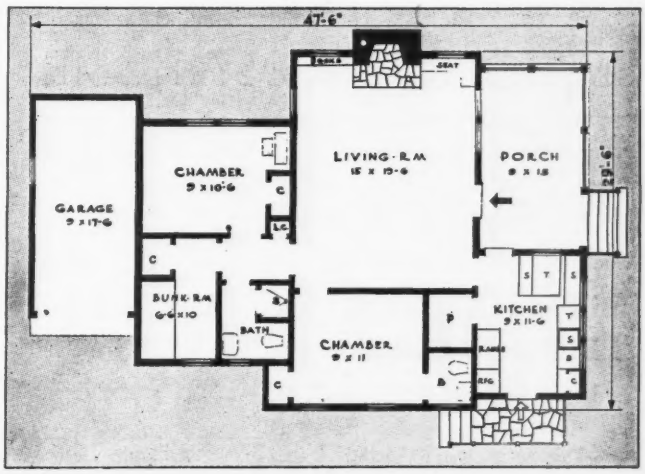
TWO-LEVEL
24′ X 45′

A LARGE GAME ROOM with above-grade windows is provided underneath bedrooms. Hall and bedrooms are several steps above the level of the living room. Linen closet is directly over coat closet. Wood box beside fireplace has opening directly to cellar stairs.

AMERICAN BUILDER BruCost FIGURES FOR THESE HOUSES ON PAGE 52



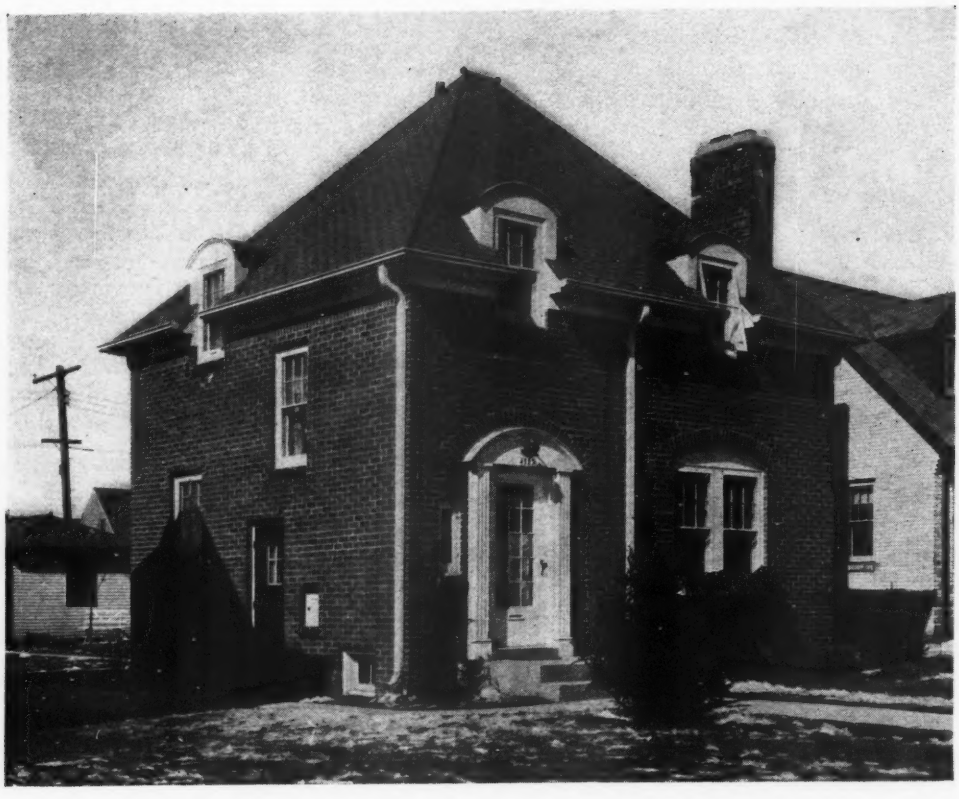
ARCHITECT THEODORE WHITEHEAD DAVIS and Builder R. A. Rice of Port Washington, L. I., built this compact, corner-lot house, which has a cubage of only 21,500. Specifications include Kewanee steel boiler, Pioneer oil burner, Balsam Wool insulation, Arco recessed radiators, brass pipe, oak floors. Bedrooms and bath are separated from balance of house in a desirable manner.



COMFORT COTTAGE

DESIGNED by Architect Chas. G. Hehn to overlook Lake Candlewood at New Milford, Conn., this little cottage has many comfort features. Living room is finished in Norway pine, stained natural, with a 1½-story ceiling and stone fireplace. Kitchen is conveniently located.

ENTIRE COTTAGE is sheathed with Celotex insulation board, over which are placed red cedar clapboards, painted white, with dark green blinds and flower boxes.



THE TRIM little brick house at the left is one of a group built for sale in the suburban Milwaukee town of Lake. No two houses are alike and all are financed under FHA mortgages. Good construction and compact design assure low cost and maintenance.

AMERICAN BUILDER True Cost FIGURES FOR THIS HOUSE ON PAGE 52

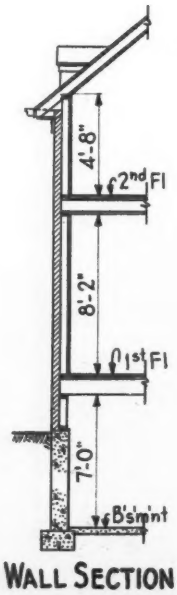
SMALL, ECONOMY HOME WITH COMPACT 5-ROOM LAYOUT IN 25x23 PLAN

Built in Milwaukee, Wis., L. E. Stanton of Badger Small Homes, Inc., Builder

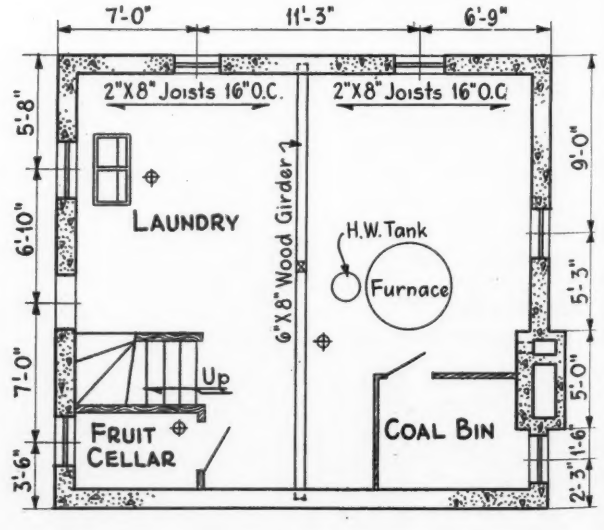
THE UNUSUAL space economy of this house is evident when one realizes that five rooms of moderate size are arranged within the small over-all dimensions. The 25-foot width allows placement on as little as a 35-foot lot although such small sites are being used less frequently today; as shown above, the lot frontage is 42 feet giving good light and air.

The bedroom closets are of generous size while second floor hall area is kept to a minimum. The stairs, front entrance vestibule with closet and service entrance are well organized in one corner of the first floor plan. The full basement has enclosed fruit cellar and coal bin.

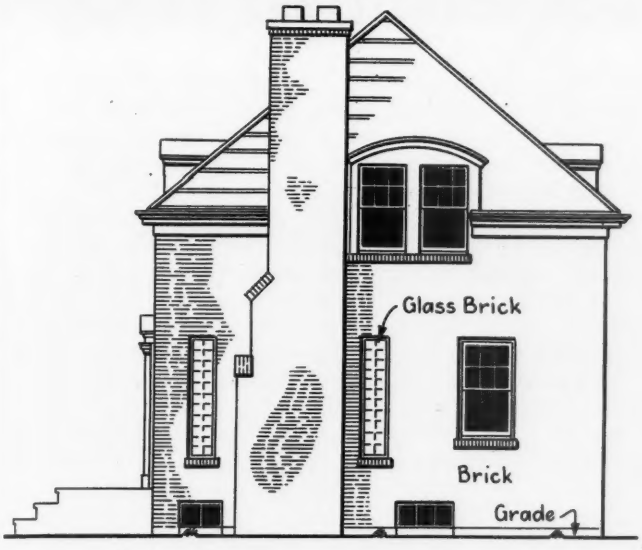
DETAILS of construction show wall section, plans and elevations. Included in the sale price are such features as single detached garage, complete landscaping, drain tile around footings, insulation, plaster over Rocklath, combination doors and copper screens and natural fireplace.



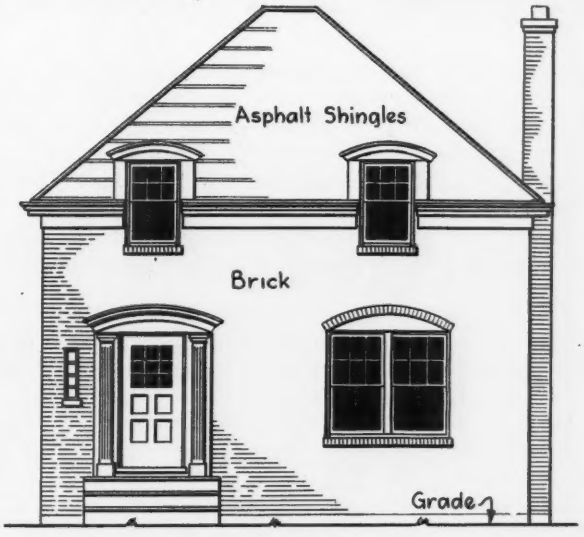
WALL SECTION



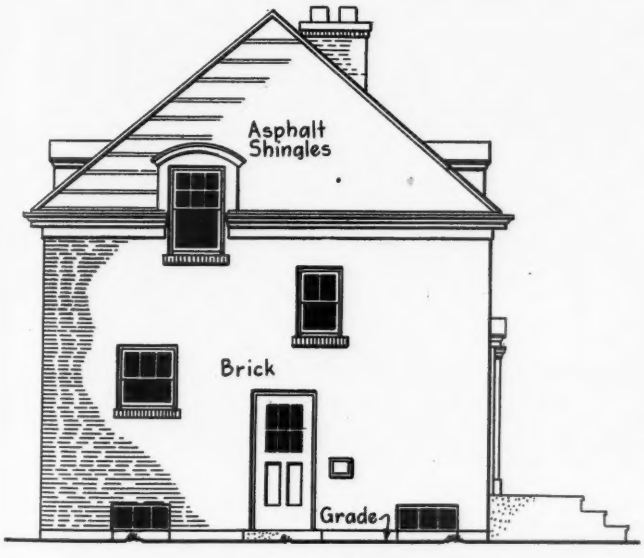
BASEMENT PLAN



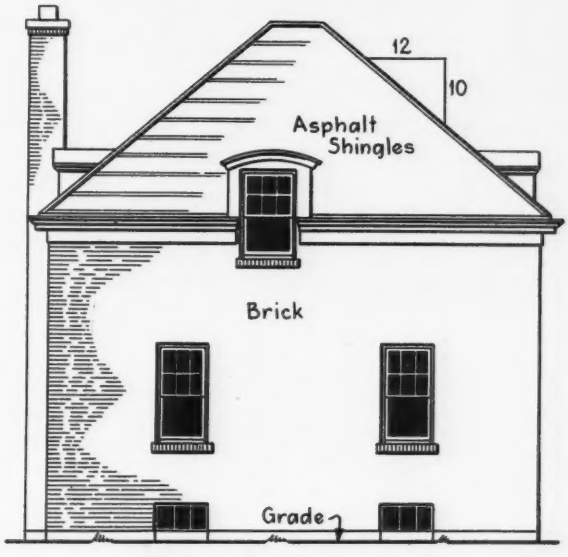
RIGHT ELEVATION



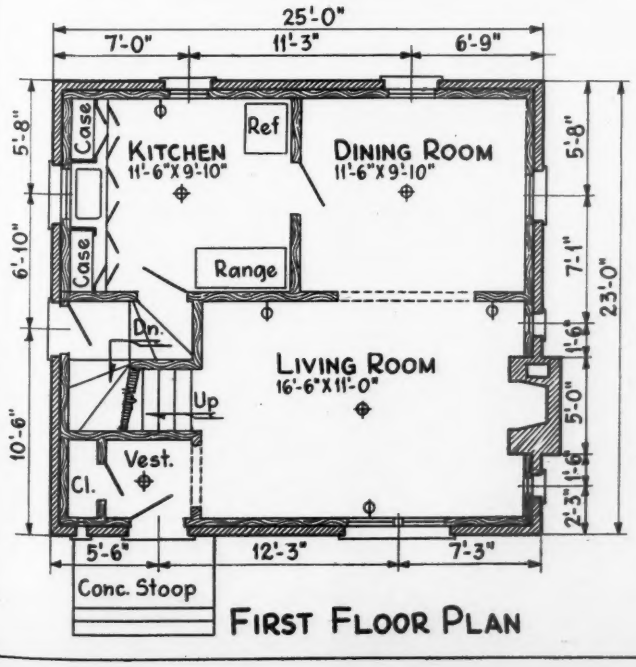
FRONT ELEVATION



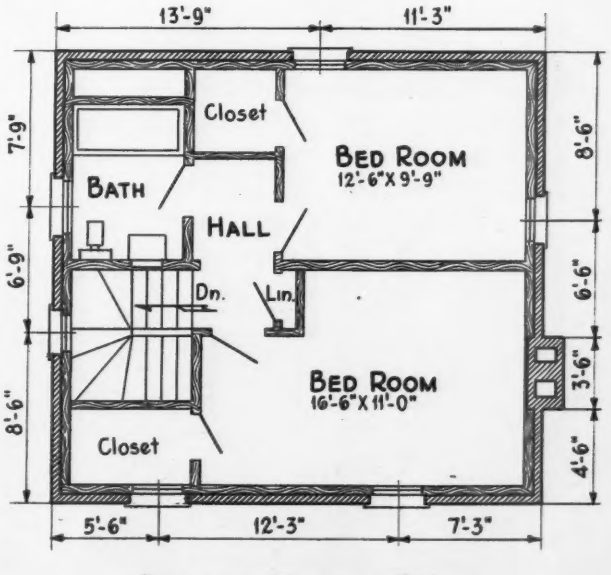
LEFT ELEVATION



REAR ELEVATION



FIRST FLOOR PLAN



SECOND FLOOR PLAN

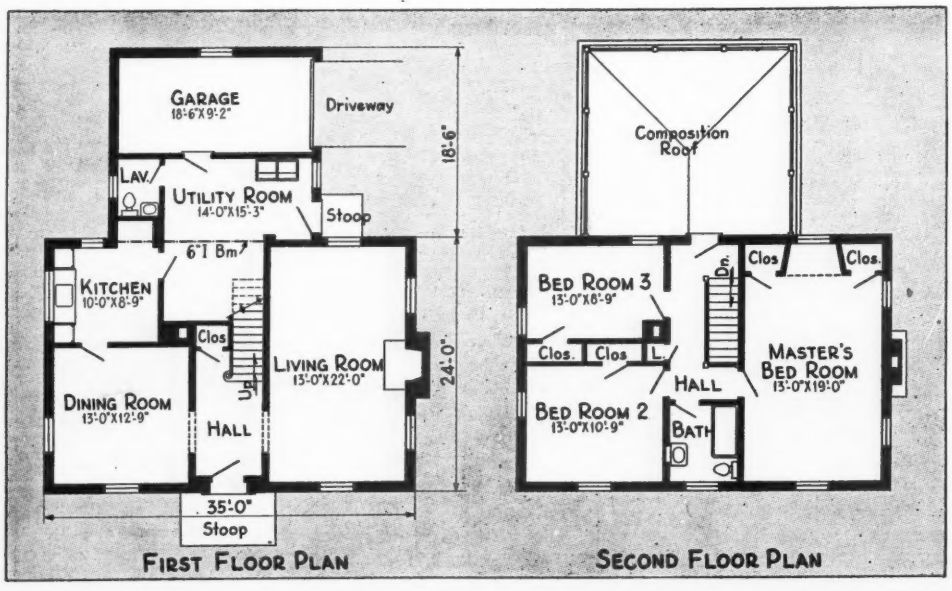
Progress in Planning Basementless Houses

RECENTLY there has been a spread of basementless houses into sections of the country where heretofore severely cold winters have made such construction impracticable except for summer purposes. Some of the factors responsible for this development are: new heating plants which can be placed at the first floor level, construction which assures a warm floor, and the realization that frequently underground cubage represents little used space.

Of course most of the houses being built in the northern section of the country still have full or partial basements, largely because people accepted them as necessary after living in older houses. Previous articles in the *American Builder* have covered the advantages of building both ways, those for the utility house being the overcoming of unfavorable excavating conditions, bringing the laundry up to first floor level for greater convenience, allowing the house to be placed close to grade, and giving space economy where fuel or household storage is of minor importance.

The E. E. Olsen Construction Co. of Pittsburgh, Pa., has done much in that locality to popularize the utility type of house. Their operations in developing a practical procedure were discussed in *American Builder,* July, 1937. One of their most recent houses without basement is shown on this page. As can be seen in the exterior view, there is no suggestion that the house is of other than standard construction, except that it fits nicely to the site. The utility room is cleverly placed between the attached garage at the rear, and the main portion of the house. It is ample in size and conveniently located. The layout is one of the Olsen basic plans adaptable to different exterior treatments, so that no two houses appear alike.

Regarding developments in the heating of these houses, the builders point out that the ceiling height has been brought down in their currently planned houses about 14 inches, which adds to the ease of heating and at the same time gives greater comfort to the occupants. The heating plant, being centrally located, is in its most efficient spot for operation. By actual record these homes are being heated for about $60 a year with gas at the rate of 55 cents per 1,000 cubic feet.



THE house shown at the left with plan above is one of the basementless utility houses built in Pittsburgh, Pa., by the E. E. Olsen Construction Co. It contains six rooms, utility room and garage. Reinforced concrete first floor slab is dampproofed with a two-ply membrane.

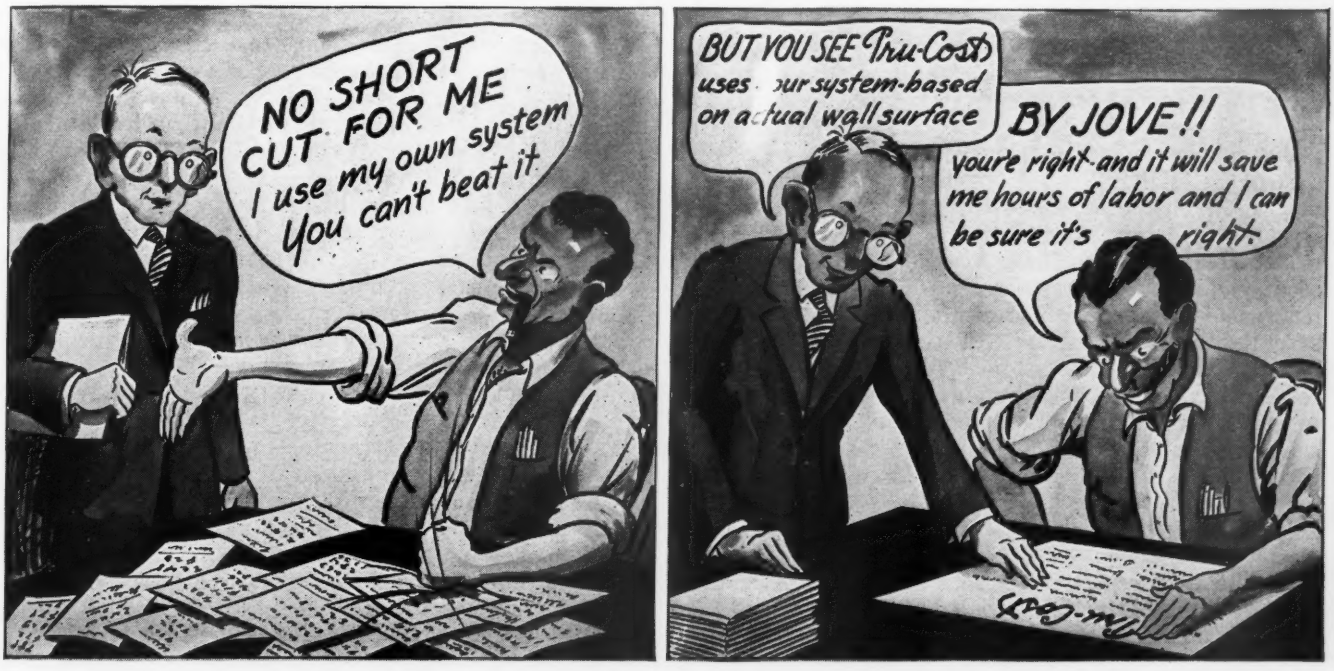
The Olsen method of operation is to complete one group of houses at a time, in which the units are related in the matter of architectural design, floor heights and placement. Each new home provides further proof as to the practicability of that basic utility house plan, and thereby lessens sales resistance to the idea.

AMERICAN BUILDER
The Cost FIGURES FOR THIS HOUSE ON PAGE 52

TruCost

How to Verify Accuracy in Estimating "HoltRates" Added to Service

By A. W. HOLT


NO SHORT CUT FOR ME
I use my own system
You can't beat it
BUT YOU SEE Tru-Cost
uses our system-based
on actual wall surface
BY JOVE!!
you're right and it will save
me hours of labor and I can
be sure it's right.

THE more experienced anyone is in estimating building costs, the more he will appreciate the value of *TruCost* unit surveys that give the actual surface of walls, floors, roofs and other units of construction for *American Builder* plans. Even those who have no faith in short-cut estimating of any kind will value the tabulation of "actual requirements" given, as evidenced by the following recent experience.

After an introduction to one of the oldest and most successful home building contractors in St. Paul, Minnesota, I explained *TruCost* to him; to which he replied bluntly: "I don't think that your *TruCost* or any other short-cut system will beat my own system that I have used for years, so know that my estimates are right." He then went on to explain how some other contractor was always spoiling some deal for him by entering too low a bid. He was about as sour on all short-cut estimating as anyone I ever discussed the subject with. When he stopped for breath I butted in with the question:

"Is your own system based on actual wall surface, actual floor surface, actual roof surface and all other actual surfaces, Mr. Contractor?" to which he replied, "Of course it is—that's the only right way to figure."

"All right," says I, "All *American Builder* plans will have all of that basic data given by this tabulation. This will save you a lot of work and, what's more, perhaps save you the trouble of outlining one or more elevations to scale so as to figure the surfaces. All you need do is to apply your own method that you know is right and know that you have the right price for any *American Builder* plan. Isn't that so?"

Obviously he agreed. And he agreed enthusiastically. But, like many contractors, he evaded my questions as to what "his own system" was. Cross-examination finally forced him to acknowledge that it was a combination of several short-cut systems plus some rule-of-thumb methods that he had learned from experience. For instance, he said that he doubled the floor surface to get the board feet of joists, girders and bridging required. I asked him how he knew that was right and he promptly said that he had proved it by many years of actual experience. When I asked him if that was for 2 x 8 or 2 x 10 joist, he replied that "either one—there isn't much difference when the job is finished."

There is the answer to most of the trouble caused by the great variation in bids submitted. Architects, builders, contractors and dealers—the ABCD's of the building industry—have some pet rule that they found worked on a job or two and continued to use it with hit-and-miss results. When they're too high they blame all the others and condemn them for their bidding. When they are too low they either go broke or use that one particular letting to try to convince a prospective client that their prices are lower than everybody else's. It's a vicious circle. And it's time that systematic methods replaced rule-of-thumb methods.

After showing that St. Paul contractor the floor table on page 63 of the May issue where 195 bd. ft. was given

for girders and floor framing of 2 x 10 joist, his face beamed the "I told you so." But when I showed him where 2 x 8 joists would figure only 166 bd. ft., or 15 percent less, and explained that these quantities were the average of a great many actual tests, he began to realize that there might be something to *TruCost* after all. We concluded our visit by my saying, as I say to everyone in the building industry who presumes to know how to estimate the cost of a proposed building:

"All right, Mr. Contractor, apply your own system to any *American Builder* home design and then try *TruCost*. It may surprise you. But be sure to adjust all the tables given to conform to your own allowance for waste. Just establish your own unit costs in accordance with your own proved methods and SEE FOR YOURSELF. In time you will know that *TruCost* is absolutely sound and ten times safer, quicker, easier and MORE FLEXIBLE than estimating by detailed lists."

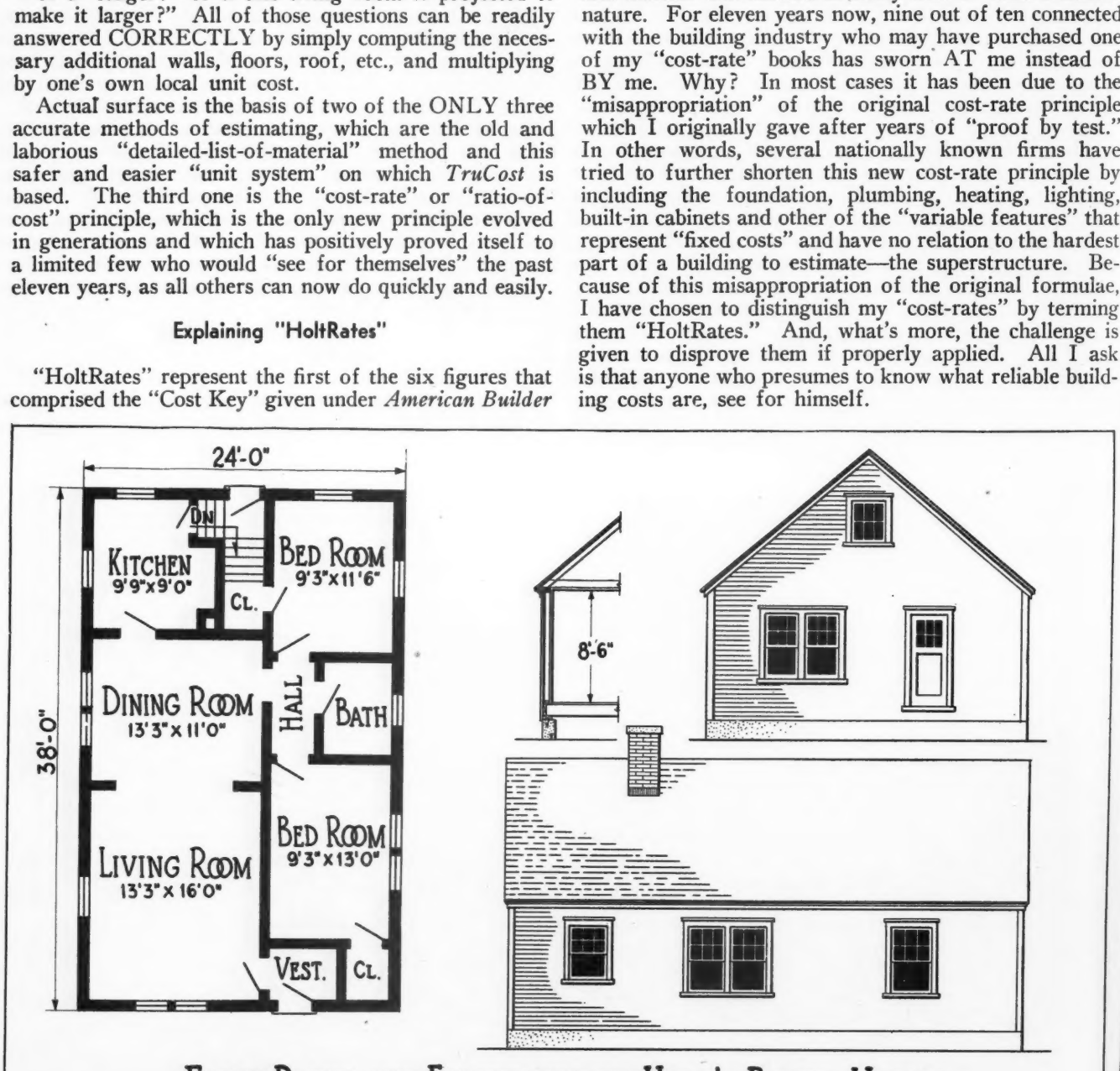
This matter of "flexibility" alone is so important. So often the questions are asked, "How much for 2′ wider? —or 2′ longer?—or if this living room is projected to make it larger?" All of those questions can be readily answered CORRECTLY by simply computing the necessary additional walls, floors, roof, etc., and multiplying by one's own local unit cost.

Actual surface is the basis of two of the ONLY three accurate methods of estimating, which are the old and laborious "detailed-list-of-material" method and this safer and easier "unit system" on which *TruCost* is based. The third one is the "cost-rate" or "ratio-of-cost" principle, which is the only new principle evolved in generations and which has positively proved itself to a limited few who would "see for themselves" the past eleven years, as all others can now do quickly and easily.

Explaining "HoltRates"

"HoltRates" represent the first of the six figures that comprised the "Cost Key" given under *American Builder* designs the past five or six years. *American Builder* was the first of all publications to adopt this "ratio-of-cost" principle and then only after a most thorough investigation and recommendation by dealers, contractors and builders who had pioneered this new principle of estimating and *positively knew by actual tests over a period of years* that the law of "relativity" applied to building costs with the same degree of accuracy that it had proved in other ways for other purposes. The judgment of *American Builder* was right then and it will now be proved to all of the "Doubting Thomases" that wear out the breeching instead of pushing ahead in the collar and, in so doing, delay progress without real reason.

"I will accept new ideas when they have proved to be true ideas," seems to be the watchword of nine out of ten men in all walks of life. Life's like that. Only about ten percent of those connected with any industry seem inclined to do those things that make for progress. History proves that. Westinghouse even had to go to England to get backing for his "air brakes for trains," and Edison was scoffed at many times. That's human nature. For eleven years now, nine out of ten connected with the building industry who may have purchased one of my "cost-rate" books has sworn AT me instead of BY me. Why? In most cases it has been due to the "misappropriation" of the original cost-rate principle which I originally gave after years of "proof by test." In other words, several nationally known firms have tried to further shorten this new cost-rate principle by including the foundation, plumbing, heating, lighting, built-in cabinets and other of the "variable features" that represent "fixed costs" and have no relation to the hardest part of a building to estimate—the superstructure. Because of this misappropriation of the original formulae, I have chosen to distinguish my "cost-rates" by terming them "HoltRates." And, what's more, the challenge is given to disprove them if properly applied. All I ask is that anyone who presumes to know what reliable building costs are, see for himself.



FLOOR PLANS AND ELEVATIONS OF HOLT'S BASIC HOUSE
ONE STORY, ELEVEN MAJOR AND MINOR ROOMS, 24'x38'-8'-6" CEILING, 5/12 PITCH, C&F CORNICE.

The "HoltRate" of any house simply means the ratio of cost of that house to "Holt's Basic House," which is shown on page 50. The "HoltRate" is given as the sixth item of the *TruCost* Unit Quantity Surveys on page 52 and which will be continued each month hereafter. As stated, this includes the superstructural units of the house or the "house proper" above the foundation and exclusive of plumbing, heating, lighting, cabinet-work and other of the "variable features" listed below the tabulation as extras to be added whether *"TruCosting"* or "HoltRating" the cost of an *American Builder* design.

1.166
$2030
34980
23320
$2,366.980

These few figures represent all the figuring necessary to have a very dependable price of the superstructure. Could any method be quicker?—or easier?

Of course not. But the big question is, as it should always be, "Is it accurate?" My answer has been the same for eleven years and several hundred others KNOW that my answer can be justified when I say, " 'HoltRates' are unbelievably dependable—but prove it for yourself."

Explaining those mysterious figures, the 1.166 is the "HoltRate" for the National Plan Service design, "The Starford," shown on this page. This 1.166 means that "The Starford" costs 1.166 times as much as Holt's Basic House shown on page 50. In other words, The Starford costs 16.6 or 16-6/10 percent more than Holt's Basic House shown on page 50. In other words, The Starford as represented by the second figure or multiplier. And 1.166 multiplied by $2,030.00 gives $2,366.98 as the "HoltRate Price" of The Starford. And this is the quickest and easiest method ever devised, with the least possible chance of error. Notwithstanding my belief that "there is no such thing as perfection," this "HoltRate" method is, I believe, the exception that proves the rule.

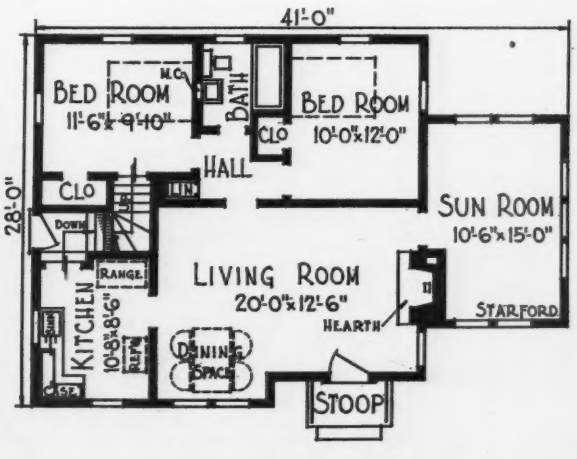
As to the accuracy and dependability of the "HoltRate" principle, in the eleven years since I first published my book, "Automatic Building Costs," announcing this new and unbelievable principle, hundreds of tests have proved that the discrepancy has never exceeded 3.2 percent and the average for one group of houses was only a trifle more than 1 percent off. But anyone can now make his own tests and be really convinced, in this way:

How to Test "HoltRates"

On this page *TruCost* Units are given for the superstructure of "Holt's Basic House" and "The Starford" with blank spaces for inserting one's own local unit costs and extending the price of each unit of construction. For instance, if walls cost, say, $30 per square, the walls for Holt's Basic House would cost 14.2 times $30, or $426 as compared to 17.5 times $30, or $525, for The Starford. In like manner 9.1 and 9.9 times one's own price per square of first floor, and also of the ceiling, will give the respective dollar cost of those units of construction. Do the same for all the other units listed for these two houses.

Units of Construction		Local Unit Price	Holt's Basic House units	Holt's Basic House amount	The Starford units	The Starford amount
Outside Walls	sqs. @ $	.....	14.2	$.....	17.5	$.....
First Floor	sqs.	.....	9.1	.....	9.9	.....
Ceiling	sqs.	.....	9.1	.....	9.9	.....
Roof	sqs.	.....	12.8	.....	14.5	.....
Hips & Val.	lin.	.....	0	.....	18	.....
Cornice, C&F	lin.	.....	140	.....	133	.....
Cornice, 6"	lin.	.....	0	.....	84	.....
Partition	lin.	.....	120	.....	116	.....
IS Fin. OS Wall	lin.	.....	124	.....	138	.....
Front Doors	opg.	.....	1	.....	1	.....
Rear Doors	opg.	.....	1	.....	1	.....
Inside Doors	opg.	.....	10	.....	11	.....
Windows	opg.	.....	12	.....	17	.....
Gable Sash	opg.	.....	1	.....	3	.....
Chimney	lin.	.....	30	.....	30	.....
Total for superstructure				$.....		$.....
HoltRate for Starford				1.166		
HoltRate X Basic Price				$.....		
Discrepancy				$..... or		% over ..... short

To test the "HoltRate" principle, *TruCost* both houses at local unit prices and add. Multiply total price of "Holt's Basic House" by "HoltRate" of 1.166 for The Starford and compare to total *TruCost* price of The Starford.



"The Starford" Design from National Plan Service, Inc. Used to illustrate TruCost Estimating Principles.

As explained below the form, multiplying one's own price of "Holt's Basic House" by 1.166 will show how much the "HoltRate" misses the *TruCost* of "The Starford."

If seeing is believing, this one test will prove that "HoltRates" rate the chance to prove their dependability further. By keeping a record of the percentage of "over" in one column and "short" in another, anyone can soon have the same implicit faith in "HoltRates" as hundreds of dealers and contractors have after years of actual test. Just last week James A. Olinger of Nevada, Ia., told me he was within $28 of actual costs on the last house completed, and that two more completed earlier in the spring checked out almost as close.

But, like labor records, the only record that anyone can absolutely depend on is his own. So check up and be absolutely convinced.

"HoltRates" will be especially helpful in pricing each home design shown in *American Builder* as it is received each month. In doing so, remember that *regardless of what the plan shows* for exterior wall finishes, roofing, doors or windows, *specifications will be controlled by one's own TruCost specifications.*

Whatever material and construction method are included for "Holt's Basic House" will *always* be included for any other house when multiplying by its "HoltRate." This is an invariable rule.

Since folks seldom buy houses as we men buy hats, it is advisable to quote a preliminary price first according to one's Standard Specifications. Then, after a house, or several houses, have been selected, one can "get down to brass tacks" and *TruCost* those houses according to Special Specifications shown by the plan or desired by Mr. and Mrs. Prospect. With the actual surface given for all units of construction for all *American Builder* home designs, it is a simple matter to quote the difference "for the house" for any specifications. For instance, if a different kind of siding is wanted for "The Starford" and it costs $3.00 more per square, 17.5 times $3.00 will instantly give $52.50 as the difference *for the house,* which is what prospective builders want to know.

Users of my "House Valuator System" will observe a change in "Holt's Basic House" from the original Basic House. It is 2′ longer, the roof is steeper with one gable sash, and the cornice is "modernistically streamlined." But the cost of the two Basic Houses will be practically the same, as can be quickly proved, so old records for the old Basic House can be used in connection with "HoltRates" given for *American Builder* or any other plans that I may HoltRate.

In conclusion I wish to express my appreciation to those limited few dealers and contractors who gave my "ratio-of-cost" idea a chance to reveal its true value to them and, in particular, to the editor and the publishers of *American Builder* for their foresight in adopting my "Cost Keys" five years ago and for this opportunity to convince everyone connected with the building industry that "Holt Rates" are surprisingly accurate and cannot be beat for quick, dependable preliminary estimates AT ONCE and—as time will prove—will become "the stone that the builders rejected." So,—

See for Yourself

TruCost Figures for American Builder Homes

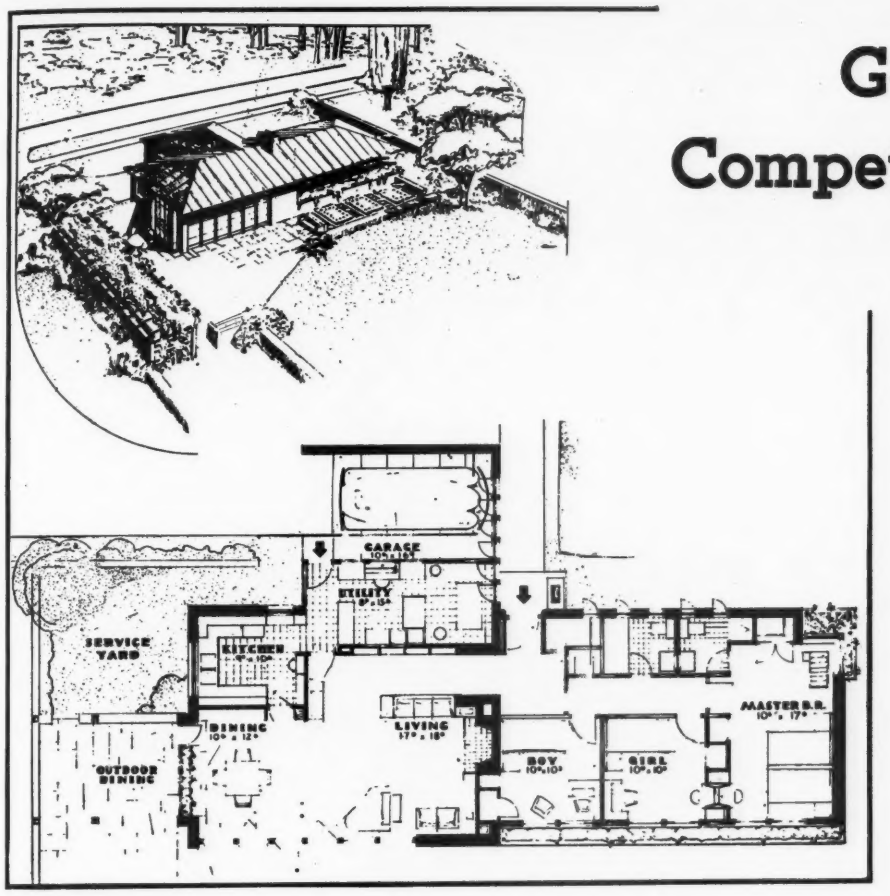
HOME DESIGNS ON PAGES AS NUMBERED

Unit of Construction	July, 38	July, 39	July, 43	July, 44	July, 45, Top	July, 45, Bottom	July, 46	July 48,
Basement Walls, lin. ft.	128	134	126	356	142	158	95	135
Trench Walls, lin. ft.	82	60	93	126	8	76	0	54
Basement Floor, sq. ft.	960	971	888	2254	1100	867	560	1010
Garage Floor, sq. ft.	340	208	446	816	0	171	0	200
Excavation per ft. deep, cu. yds.	46	53	44	106	46	44	24	46
HoltRate on following items	2.264	1.236	2.170	3.055	1.294	1.323	1.107	1.878
Outside Walls, squares	30.5	16.0	21.2	42.4	18.2	17.9	15.1	28.3
First Floor, squares	9.6	9.7	8.9	22.5	11.0	8.7	5.6	10.1
Second Floor, with Fin. Flg., sqs.	12.7	0	11.0	0	0	0	5.6	8.4
Second Floor, without Fin. Flg., sqs.	0	0	2.3	0	0	0	0	0
Ceiling, sqs.	13.0	11.6	14.8	30.7	11.0	10.4	2.9	12.1
Roof Pitch, in. rise per ft. run	10″	6″	11″	4″	12″	10″-14″	11″	12″
Roof, squares	18.0	15.2	20.5	39.2	16.9	18.0	9.2	16.8
Hips and Valleys, lin. ft.	52	150	32	240	68	36	102	0
Cornice, type and size of	C & F-216	C & F-154	C & F-172	C & F-64	C & F-192	C & F-208	C & F-52	C & F-182
Cornice, lin. ft.	0	0	4″-148	12″-360	0	0	12″-88	0
Partition, lin. ft.	290	140	281	297	130	130	133	218
Inside Finish OS Walls, lin. ft.	312	168	252	438	142	158	190	273
Front and OS French Doors, opgs.	4	2	2	7	3	1	1	1
Rear and Grade Doors, opgs.	1	2	3	3	2	2	1	2
Garage Doors 9′ wide	2	1	2	2	0	1	0	1
Inside Doors and Cased Opgs., opgs.	24	11	25	22	12	12	11	16
Windows and Casements, opgs.	24	12	34	34	13	17	14	20
Gable Sash and Louvers, opgs.	2	0	0	0	4	2	0	2
Chimney, lin. ft.	38	26	34	24	32	30	36	40
Main Stairs	1	0	2	0	1	0	1	1
Porch Floor, sqs.	1.4	1.0	0	3.3	.3	1.7	0	.5
Porch Ceiling, sqs.	1.4	1.0	0	3.3	.1	1.4	0	0
Porch Beams, lin. ft.	26	16	0	30	8	24	0	0
Porch and Bal. Post and Newels, No.	4	1	0	2	0	7	0	8
Porch Roof, sqs.	1.8	0	0	0	0	0	0	0
Porch Cornice, lin. ft.	28	0	0	0	0	0	0	0
Porch and Deck Rail, lin. ft.	0	0	0	0	0	40	0	57

Necessary Home Equipment, Fixtures, Accessories, Extras

Since the above surveyed items cover only the actual superstructure of the house, you should figure and add the following items as specified, or wanted (and don't forget Overhead and Profit):

Areaways, Cellar Sash, Coal Chute, Basement Partitions & Doors, Attic Flooring, Attic Stairs, Blinds, Gutters & Downspouts, Fireplaces, Built-in Cabinets, Rail & Newels for Stairs and Stair Well, Beamed Ceiling, Weatherstrips, Tile Work, Plumbing, Heating & Air Conditioning, Lighting, Terraces, Patio Walls or Fences, Sidewalks including Porch Steps, Driveways, Unattached Garages. Also add for painting and decorating if not included in Unit Costs.



Gas Home Competition Winners

$13,700 in Prize Money Paid to Winning Contestants. Designs Judged in New Auditorium at New York World's Fair

AT LEFT is shown one of the prize-winning designs in the American Gas Association Competition. The $1,000 award went to 3 students at Cranbrook Academy of Art, Bloomfield Hills, Mich.

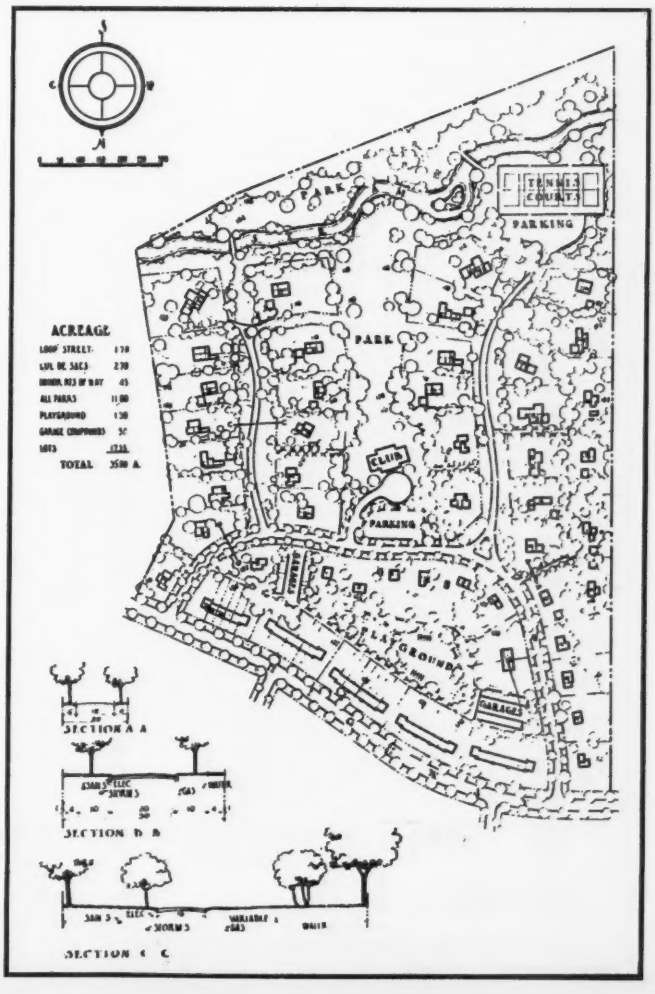
BELOW is shown the winning design for neighborhood planning, which was awarded another $1,000 prize. This suggests a garden-type traffic-safe layout for homes in a 35-acre community.

WITH a dramatic finish in the new auditorium at the New York World's Fair, the American Gas Association's nation-wide competition for all-gas home designs was concluded June 6, and $13,700 in prizes awarded to architects, draftsmen and students from various parts of the country. One of the prize-winning designs which received $1,000 is illustrated above. This was designed by three students in the Cranbrook Academy of Art at Bloomfield Hills, Mich.: W. C. Houtz, Arthur McVoy and Leonard Wayman.

Apparently the entries in this home competition are convinced that the home of the future will be of modernistic design, for all but a small percentage of the entries were of an extreme type of modern or futuristic design. It is rumored that the judges looked eagerly for at least one good traditional house to which they could award a prize, but their search was in vain.

An interesting feature of the closing of the competition was the fact that the designs were on display and viewed by the judges at the New York World's Fair. The architectural competition was the first step in an aggressive program on the part of the American Gas Association to sell the public on the advantages of gas for the four principal operations in a home—cooking, heating, refrigeration and hot water. Announcement of the prize winners was made at a dinner at the Ambassador Hotel attended by many notable persons in the building and gas industries.

The second and more important phase of the Gas Association program will consist of the Builders' Competition in which prizes will be awarded to builders of gas-equipped houses. As part of the program the Association will sponsor demonstration all-gas houses in many communities in cooperation with aggressive builders. One of the first of these demonstration homes was opened in Hartford, Conn., June 16 by the R. G. Bent Company and is fully described in the article on pages 40 to 43 of this issue.



How C. P. Mills Sells Quality Row Houses in Philadelphia

The following story, entitled, "How Dear Is a Cheap Home," was used for sales promotion by this alert eastern builder.

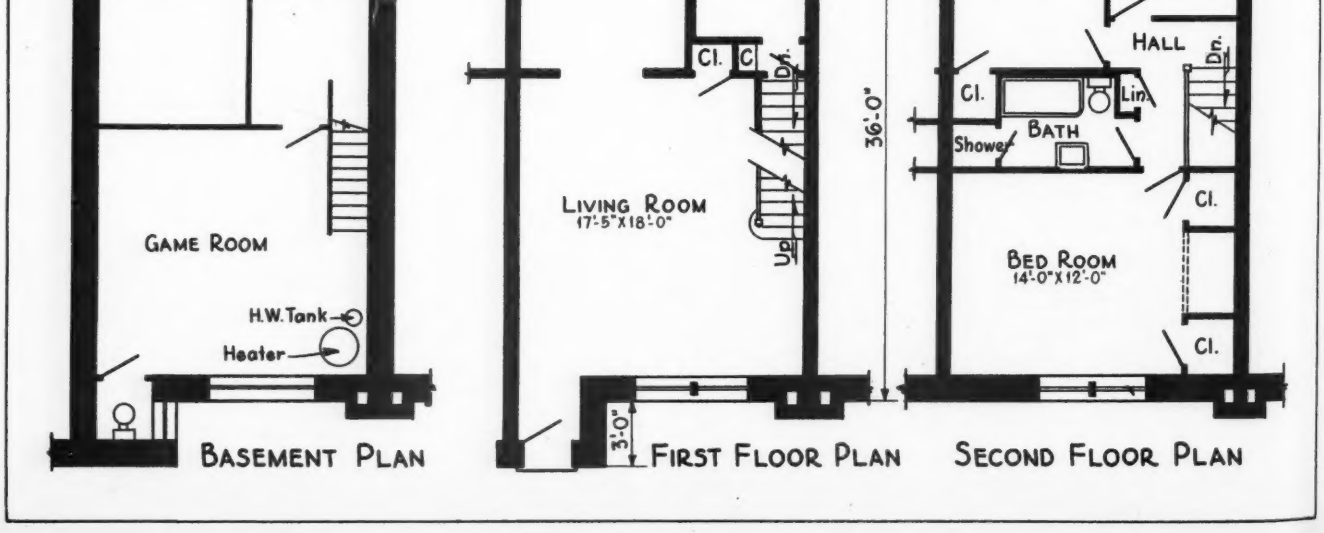
MILLS quality row houses used for comparison in his story based on experience.

JOHN," Ellen cried out, bursting into the room, bubbling all over with enthusiasm, "I have found just the home we should buy. Gwendolyn and I went out house-hunting and we located the duckiest little home for only $4390."

For some reason or other, John didn't fall backward off his chair, because he heard considerable about various cheaply priced homes, that couldn't pass muster on close examination. Yet he had to show his wife the deference to listen to what she had to say on the matter. Maybe her story would disclose something different, but he felt reasonably sure that it would not. He had heard it often said that—if experienced builders built the selfsame house of equal size and interior equipment—prices should not vary $100 in the final cost. If a house was priced cheaper it meant that something was done to make the price cheaper.

"How wide and how long did the agent say the house measured?" asked John, reaching for a pencil and fumbling through the papers in his inside coat pocket for an envelope to figure on the rear. You see, John was one of those practical minded souls who preferred to reduce things to figures, wherever possible.

"The house was 18 feet wide and 30 feet long, and



there was a nice entrance out front that gave a two foot deep vestibule," Ellen replied with the conviction that here was the end of house-hunting.

"Now we will be getting somewhere near to the explanation of that cheap price," John managed to mumble as he started to set down some very important figures. "For comparison, let us take the home we inspected last Sunday on Lynford Street, where the builder quoted $5,250. That was an 18-foot home, only it was 36 feet long. All other things being equal, the home you just looked at should be priced at approximately thirty over thirty-six times $5250, which would give, let's see—$4375."

"Well," and John looked up smilingly from his figures, "I should say that the home was fairly priced at $4390, if it had the same equipment and finish as the one we saw at $5250. If you are satisfied that all our full sized furniture will go into the rooms, and if you will be content with the smaller home, we will look further into the possibilities."

"No, it is not as complete as the $5250 home, John. It does not have the tile kitchen or the stall shower. And it would be a little hard for more than two to have breakfast at once in the kitchen. And they left out the basement toilet because, as the agent said, it was just as far to walk downstairs as upstairs and was not of much practical use," Ellen managed to bring out. It began to suddenly dawn on her what flimsy explanation was being offered for leaving out such an essential item as a basement toilet.

"Well, well, well," mused John, "let's start on this other piece of paper where we will have room to put down some of the things we would NOT get in the cheaper priced home." And John then carefully questioned Ellen about the entire house, and here was what he found out:

MISSING ITEMS	COST
Oil burner	$160
Tile kitchen	90
Tile stall shower, plate glass door	100
Basement toilet and enclosure	50
Finished play room	15
4 inches JM Rock Wool Ceiling Insulation	50
Cedar closet	15
Leaded glass skylight	10
Welsbach hot water heater	20
Venetian Blinds and Window Shades	28
Bronze window screens	18
Lorrain Oven Control and Insulation	12
Caulking and weatherstripping	16
Open Colonial staircase (vs. boxed)	35
Stone front 2nd floor (vs. brick)	50
Inlaid parquetry floors	30
Trees at curb	3
Total	$702

These figures amazed even practical John, and he carefully went over each item, and even called up a friend of his who knew something of building costs, so that he could check over some doubtful items. He did not consider the $30 additional cost to build a 4 foot vestibule, so necessary to give the proper outside appearance and the inside door clearance. Nor did he include other items of superior quantity, quality or workmanship. Even Ellen could hardly contain herself, because she was starting to realize how deceptive a cheap price can be in homes as in clothing, meats and groceries.

LEFT: Typical floor plans of one of Builder Mills' houses. Right: List of features as contained in one of his sales brochures and described as being "Five Years Ahead of Its Time."

"You see now how one can be misled by first appearances. Come to think of it, I could apply the same line of reasoning and figures to that $4900 house we also looked at, leaving out a few of the items from our list which are included in the $4900 home, and the results would follow in the same general way. But you did not like the layout, so we'll not bother going through the check-up on that one," John continued.

"Suppose we look at it another way than from the fact that we would be short-changed $702 if we bought the cheap priced house." (You will note that John has

(Continued to page 92)

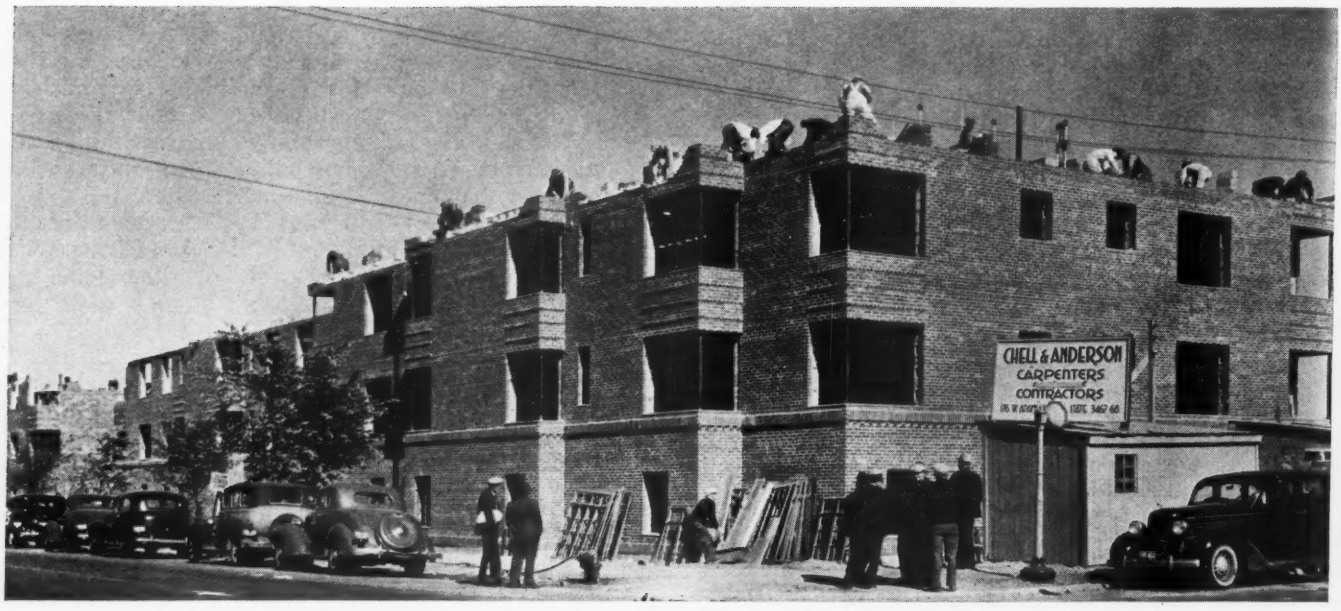
Outstanding Features

LOOK at the appointments! You will realize that we are offering you, at $5250 . . value that equals . . indeed surpasses, $6000 homes.

1. Chestnut Hill ALL-STONE Colonial Fronts 18'2" wide, with pleasingly varied architecture.
2. Low terraces with deep setback and 4' individual cement walks. No high steps to climb.
3. Very large cement plaza; on the shady side of the street.
4. Tastefully landscaped with several varieties of evergreens and with trees along the curb.
5. Inviting, large Colonial vestibule entrance; with a beautiful, harmonizing front door having a solid brass pitcher-handle lock; knocker, letter slot and push button to match.
6. Massive Colonial stone chimney.
7. HEMLOCK joists 3"x10" in first and second floor and 2"x10" HEMLOCK roof rafters spaced only 16 inches apart. HEMLOCK studs. Ample structural steel over all openings.
8. NEW whole BRICK party and rear Walls. Rears of high-quality face brick laid in colored mortar Soldier courses over windows.
9. SIX LARGE ROOMS, TILE BATH ROOM, STALL SHOWER WITH CHROME-TRIMMED PLATE GLASS DOOR.
10. Tastefully finished GAME ROOM.
11. Beautifully colored tile bath room, with ventilating leeded glass skylight. Lovely fixtures. STALL SHOWER.
12. Large closets with brass garment rods, hooks and shelf edgings.
13. Linen closet and CEDAR closet. Cloak closet in living room.
14. PARQUETRY FLOORS WITH SPECIAL WALNUT INLAYS; THE KIND SPECIFIED FOR EXCLUSIVE HOMES.
15. KITCHEN COMPLETELY TILED. Enameled iron sink and drainboard. Hand-duo chromium-finish sink strainer.
16. MAGIC CHEF Console Gas Range, with fully insulated oven and smoke-proof broiler; equipped with OVEN CONTROL.
17. Three wall kitchen cabinets, base unit and alcove for household supplies.
18. Armstrong cork embossed inlaid linoleum, cemented on felt.
19. Charming, wide, easy, comfortable Colonial staircase. Birch hand rails.
20. Modern, effective, safe and healthful HOT-WATER HEATING SYSTEM with concealed "American" convector radiators, JACKETED and INSULATED No. 7 ARCO BOILER, especially built for gas, oil, or coal
21. OIL BURNER or AUTOMATIC GAS HEAT.
22. CORBIN locks throughout; front and rear doors use one key.
23. Colonial hinges. Steel sash chains.
24. Copper plumbing pipes from curb and throughout house. Copper pipe hangers.
25. BASEMENT TOILET. Cellar drain. Hose connections for front lawn and garage.
26. Welsbach hot water heater, automatically or hand controlled.
27. Garage 19' long. You can walk around your car.
28. Grade from driveway to garage almost level.
29. VENETIAN BLINDS AND WINDOW SHADES.
30. BRONZE WINDOW SCREENS WITH ZINC RUNNERS.
31. WINDOWS AND DOORS CAULKED AND WEATHERSTRIPPED.
32. Copper spouts, gutters, eave boxes, flashings and slag stops. Four-ply slag roof guaranteed 10 years. Variegated slate front roofs.
33. EIGHTEEN double electrical receptacles.
34. Built-in aerial and ground wire for radio.
35. Sunfast washable wallpapers by Asam.
36. Rock-lath wall board throughout; no wood lath.
37. Four inches of water proof and fire proof JOHNS-MANVILLE ROCK WOOL INSULATION in roof.
38. "CURTIS" Quality millwork and stairwork.
39. Interiors finished with KYANIZE ENAMEL.
40. Natural finished exteriors, requiring very little upkeep.

EIGHT MINUTES to Frankford Shopping Center and Frankford "L" (free transfer)

SAVE MONEY by making use of this list for comparison.



HOYNE-GRANVILLE APARTMENTS under construction in Chicago by Chell & Anderson, carpenters and contractors, financed under FHA plan.

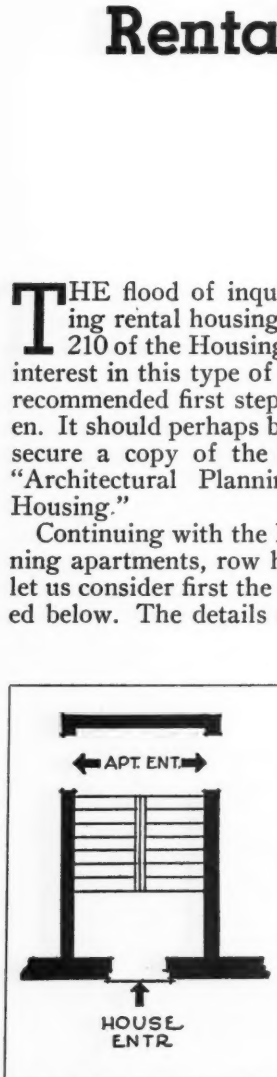
Rental Housing Construction—Part II

Further Planning Details for FHA Approved Apartments and Row Houses. Data on Entrances, Living and Dining Rooms, Kitchens

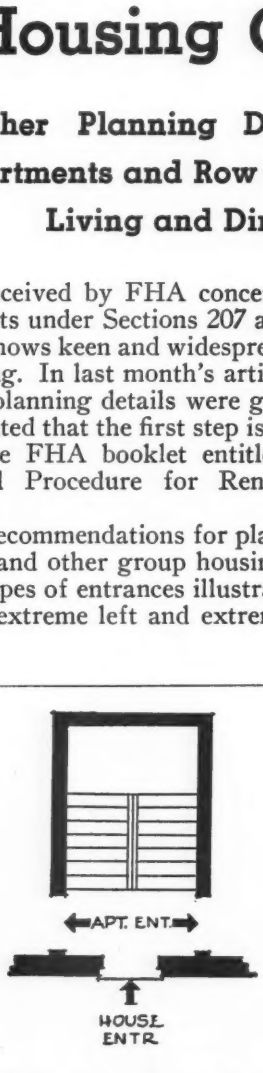
THE flood of inquiries received by FHA concerning rental housing projects under Sections 207 and 210 of the Housing Act shows keen and widespread interest in this type of building. In last month's article recommended first steps and planning details were given. It should perhaps be repeated that the first step is to secure a copy of the 27-page FHA booklet entitled, "Architectural Planning and Procedure for Rental Housing."

Continuing with the FHA recommendations for planning apartments, row houses and other group housing, let us consider first the four types of entrances illustrated below. The details at the extreme left and extreme right are recommended because there is no waste space and they are convenient to use. FHA regulations state that wherever possible, public stairs should receive daylight. If the building has a basement, the most economical stair hall is one with a double run of steps, with the building entrance between the first floor and basement levels. This brings the floor landing near the center of the building and permits arrangement of rooms about a private foyer.

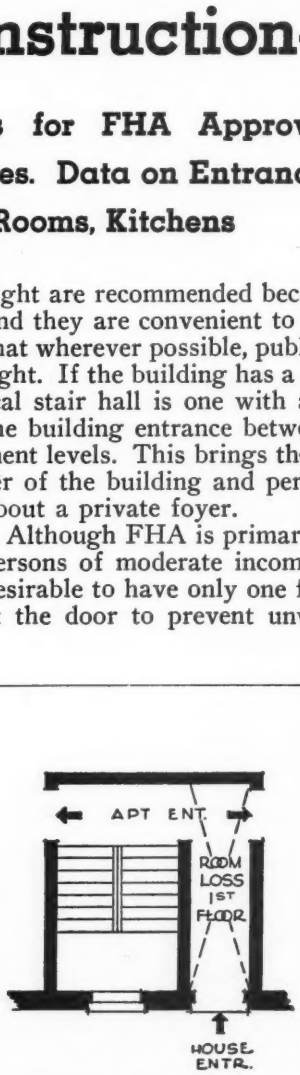
Although FHA is primarily interested in housing for persons of moderate income, in some cases it may be desirable to have only one front entrance, with a guard at the door to prevent unwelcome intrusion. This is



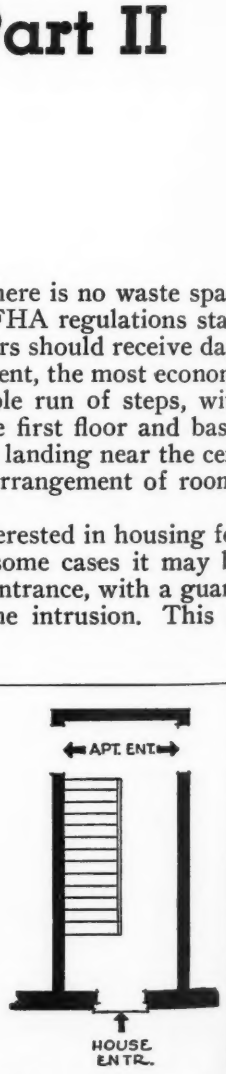
ENTRANCE DETAIL — Good. Where entrances are favorably located no space wasted.



POOR—Location of apartment entrances too close to main entrance.

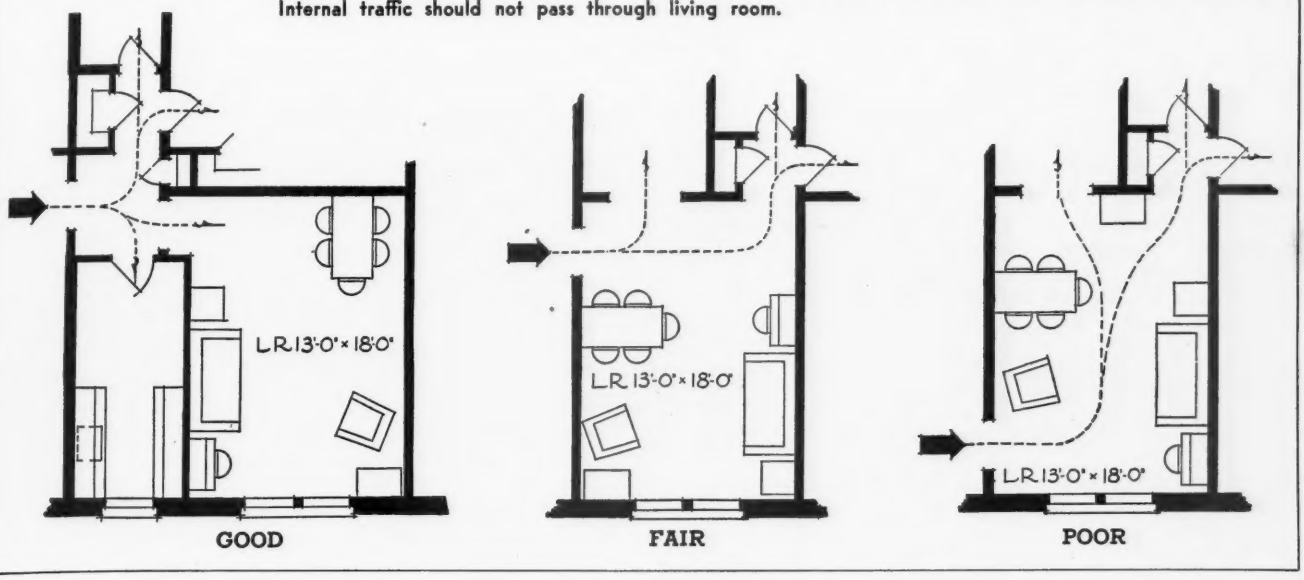


FAIR—This floor-level entrance is satisfactory except for loss of space indicated.



GOOD—Satisfactory solution of floor-level house entrance plan.

PLANNING THE LIVING ROOM—Three sketches showing how apartment entrance affects livability. Internal traffic should not pass through living room.



more expensive than the details indicated below. Where an incinerator is used, it should be in a recess or utility closet off the hall. The flue should be of ample size, with the minimum 16x16 inches.

Halls and foyers should be adequate but not wasteful. Three feet for the former and three feet two inches for the latter are minimum widths. FHA states that "large unlighted foyers and long halls are usually a sign of poor planning."

LIVING ROOMS.—The minimum width of FHA approved living rooms is 11 feet, and if the room is intended to serve more than one function it should be larger. Where the living and dining rooms are combined, the added space should be provided so that table and chairs can be effectively used without reducing the balance of the living area.

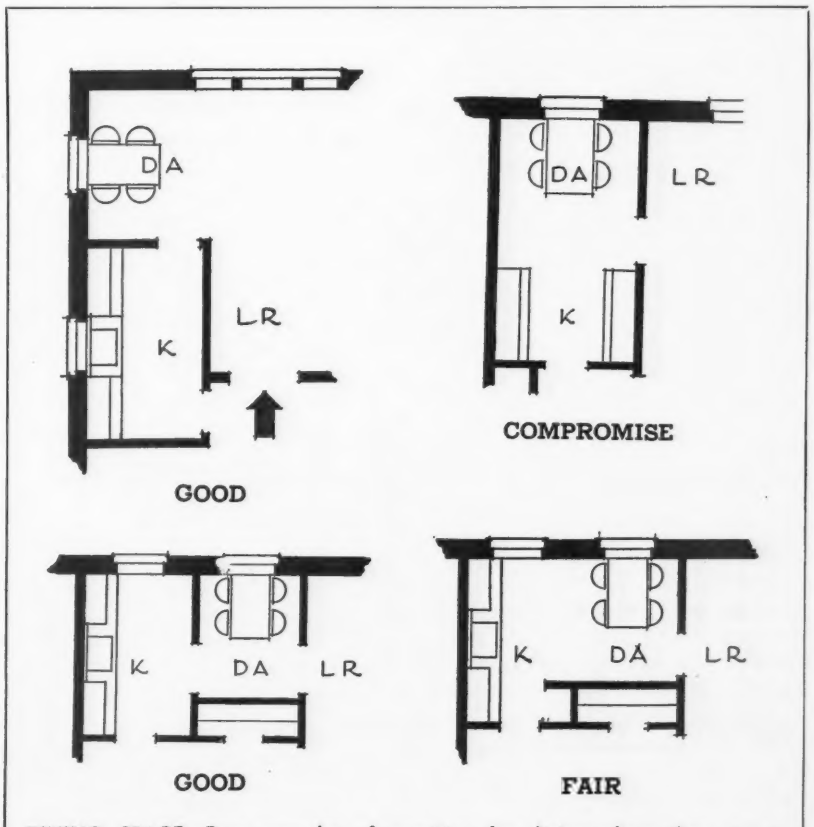
Where possible, the living room should be entered through a small foyer in which outer garments can be removed. Where this is not possible, entrance should be at the end of the room opposite windows. The necessity of passing diagonally through a living room to reach other rooms should be avoided.

Living rooms should be given a favorable location with respect to sunlight and view, and openings should be studied so that sufficiently long and unbroken wall spaces will be provided to receive the larger pieces of furniture normally used.

DINING SPACE.—In small quarters, the tendency today is to eliminate large dining rooms in favor of dining alcoves. These may be opened into the living room to permit a more varied use of the dining space, give an effect of spaciousness and provide light and ventilation in the living area. Several approved arrangements are shown with this article. The FHA states that "use of unlighted entrance foyers for dining is not considered good practice." In figuring the number of rooms in an apartment, FHA calls a dining room of 110 square feet one room. It classifies a dining alcove of 45 square feet as one-half room. Kitchen and dining space combined over 60 square feet are classified as one room. A kitchen less than 60 square feet but over 50 square feet is classified as one-half room.

Kitchen equipment, according to FHA, should be arranged "in sequence corresponding to the order of use in the preparation of a meal." In general, the oblong room, wide enough to accommodate fixtures on both long sides, is more efficient than a square room.

(Continued to page 86)

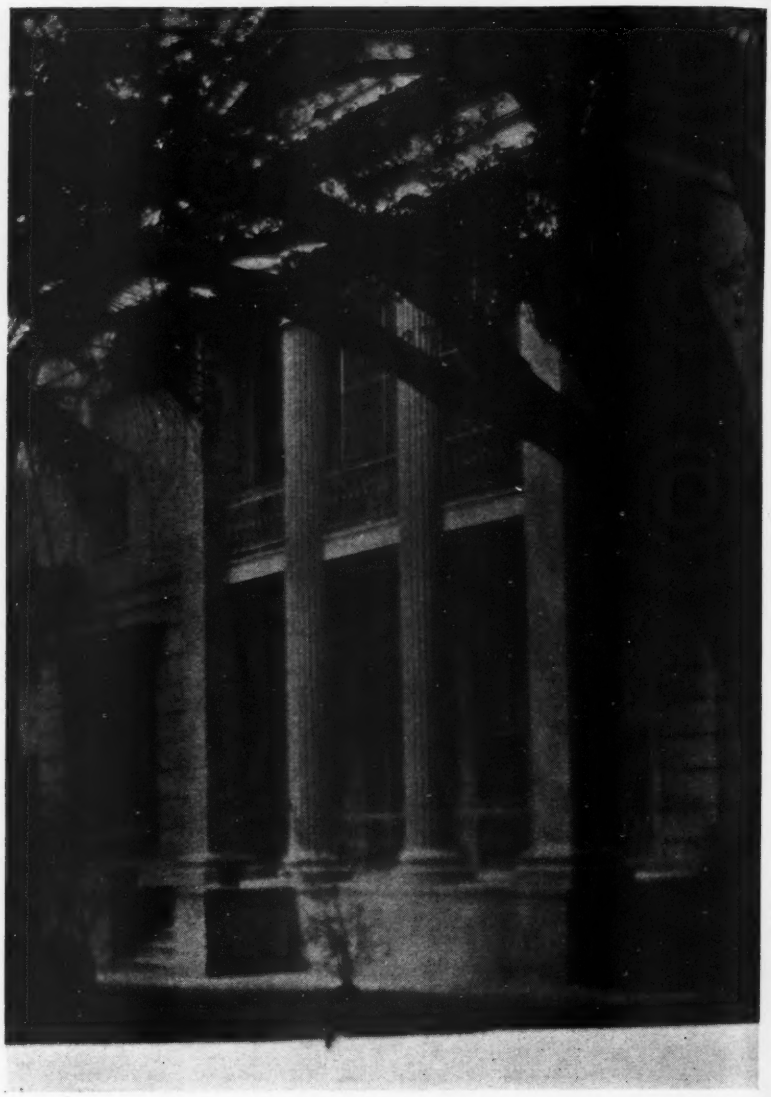


DINING SPACE—Four examples of provision for dining where there is no separate dining room. The 2 plans at left are recommended by FHA.

Ante-Bellum Homes of Historic New Orleans

By P. J. RINDERLE

The recent convention of the American Institute of Architects in New Orleans gives this discussion a special timeliness and interest.—Editor.



DIGNIFIED architecture of the Greek Revival Period of 1830-60 characterizes the Garden District of uptown New Orleans.

IN THE years immediately following the acquisition of Louisiana by the United States a steady stream of artisans, merchants, bankers, speculators and adventurers flowed into New Orleans from all over the country and proceeded to share in the great prosperity that engulfed this region prior to the Civil War. The original city, now known as the Vieux Carre, contained the business and financial heart of the community, but with the coming of the Americans the influence of the Creole diminished and the balance swung to the other side of Canal street where the newcomers built their shops, banks, theatres and hotels. What began as a trickle soon grew into a torrent and in the decades between 1830-60 the Vieux Carre was well on its way to becoming largely a picturesque section of the growing city. Just as the Americans ignored the Vieux Carre from a business standpoint, so they refused to build their homes within it. As clannish as the Creoles, they established several suburbs outside the city, the most famous of which was Lafayette, embracing nearly all of what is now known as the Garden District.

Today this district is famous throughout the country for the unique architecture of its beautiful ante-bellum mansions. Built at a time when prosperity was at its peak these homes, according to Nathaniel C. Curtis, "represented the highest expression in domestic architecture that the wealth and talent of the day could produce." As habitable today as when constructed seventy-five to a hundred years ago, the manner in which they have withstood the vicissitudes of time is a striking testimonial for the sound methods of the old-time builders. Increasing the attractiveness of the homes are the numerous trees, the flowing vines and the green shrubbery which are everywhere in evidence on the spacious grounds and which, because of the contrast with the Vieux Carre's picturesque congestion, inspired this section to be named the Garden District.

Curiously enough, a flood played an important part in developing this section. In the spring of 1816 a crevasse in the levee above the city, one of the last ones to take place in New Orleans, flooded the surrounding territory, including the extensive plantation holdings of Francois Livaudais. Upon the subsidence of the waters Livaudais was astounded to find three to four feet of river sand blanketing his rich, black earth and dooming it to idleness for several years. While contemplating this prospect he was approached by a group of speculators who realizing that the added elevation and the porousness of the sand were conducive to good drainage desired to lay out streets and lots on his property. Livaudais agreed, and the project proved immensely successful.

Probably the first to build in this new residential section, at least his home is the oldest one in existence, was a Thomas Toby of Philadelphia who chose a type of architecture not ordinarily followed in subsequent years. This was the raised cottage, indigenous to Louisiana, and designed to lessen as much as possible the inconvenience of floods. Thomas Toby's house was built on Prytania and First Streets and still stands. It is a two story structure with the bottom floor used as a basement. Access to the deep porch that extends on three sides of the house is by a graceful stairway with curving balusters broken in the middle to allow entrance from the side. The roof which is flat and covered with slate is surrounded by a plain entablature supported by square, wooden columns. The windows, tall and comparatively narrow, are in the French style. Set in the midst of beautiful foliage the elegant white structure is exceedingly appealing in its

classical simplicity and wealth of refined beauty.

Scattered throughout the city are several other homes of this type, although they are more commonly found in the country parishes. Notable examples of this unique architecture are the Stauffer home in Metairie Lane and Chaffraix Cottage in St. Charles Avenue, the former built well before, and the latter during, the Civil War. An interesting feature of the Stauffer place is the balustraded space atop the sloping roof used in olden times as a lookout when floods were anticipated. The roof in front is broken by two dormers while the flat side has a solitary window with an arched top and flanked by pilasters. The columns of the second story porch are circular and have simple doric capitals. The Chaffraix Cottage is a misnomer—it is nearly a mansion. Built in the 1860's by Mrs. Shephard Brown who was ousted from her Garden District home by General Butler, it is a fine type of the French colonial raised cottage of the Greek Revival period. White, constructed mainly of plaster-covered brick, it has a deep, irregular front porch with Corinthian columns, access to which is had by a long, central staircase. The windows of the second floor are long and narrow, harmonizing with the typically high ceilings. The roof, flanked on each side by three tall chimneys, has three dormers with pediments and pilasters. Both the Chaffraix and Stauffer homes have well kept grounds whose brilliant greenery offset pleasingly the glaring whiteness of the buildings.

A different type of ante-bellum architecture, one in the main confined to the Garden District (bounded by Jackson Avenue, Magazine Street, Louisiana Avenue and St. Charles Avenue), is that which arose around the middle of the nineteenth century when great interest was manifested in Grecian archaeological discoveries and simulation of Greek architecture became the vogue. Yet these Greek Revival homes are by no means purely classical. Rather, the Greek influence indicated itself in such things as the profiles of the mouldings, the designs of the ironwork, the doorways and, in general, the ornamental features of the houses. In some cases, the home boasted a formal portico in the front with great care taken that its dimensions were correct and the proper symmetrical effect achieved.

In time, two classes of people came to populate the Garden District; the so-called merchant princes—Americans whose habitation in New Orleans was comparatively recent and who were carrying on a tragi-comic feud with the Creoles; and the wealthy sugar planters who already had magnificent places on their plantations but desired also to have city houses for the accommodation of themselves and their many relatives. Both classes had much money and they spared no expense in building. As a result, the thirty years prior to the Civil War saw more building on a lavish scale than any other comparable period before or since, and the brunt of the construction took place in the Garden District.

Although there was a good deal of similarity in the construction of these homes, largely because they were built at the same period and were laboring under the same architectural influence, nevertheless each possesses an individuality of its own reflecting the tastes and personality of its builder. In general, however, Garden District homes are two stories in height and raised several feet off the ground. They are roughly L-shaped, the wing in which the servant quarters, kitchen and store-rooms are located being lower than the principal part of the house. Construction was of brick, covered with cream-colored plaster, although all wood was quite common. The plainness of the smooth sidewalls is broken by galleries with cast iron railings and two tall chimneys over the simple parapet.

Imposing as are the exteriors of these mansions, the real elegance is in the interiors. If, as in many cases, the entrance is at one end of the colonnaded porch, there is a long hallway leading to a spacious dining room to the rear and flanked on one side by an oblong drawing room. This room, often called a "double-parlor" because of its division by an arch or sliding doors, is the most impressive feature of the home. The floor, of a heavy, resistant wood, is highly polished and mirror-like. Each division of the double-parlor is identically treated in its permanent fixtures, the most promi-

(Continued to page 92)

ABOVE: Chaffraix Cottage. Built during the Civil War by Mrs. Shephard Brown who was ousted from her Garden District home by General Butler. Fine type of French colonial raised cottage of Greek Revival period. Still used as a residence, it contains many valuable art treasures.

BELOW: The Leeds Mansion. Built before the Civil War by J. P. Harrison of Mississippi. Occupied during the War by Charles Leeds who made the guns used to defend the city. Located in Garden District.

A TEACHER-CRAFTSMAN, Wallace Abernathie (*left*) shows vocational training students in the Champaign, Illinois, Senior High School how to do good carpentry. Supervised by instructors who work at their respective building trades during vacation periods, the students recently designed and built a salable small house.

School Boys Learn to Build

A FIVE-ROOM residence which is nearing completion on a quiet, shady street in Champaign, Illinois, represents something new in the building industry—an experiment in cooperation within the industry which may, by example, materially affect the future of America's building program.

The house was designed and built by students in the vocational training classes of the Senior High School of the Champaign public school system. Cooperating to make the school project possible were the Board of Education; the Building Trades Council, an American Federation of Labor affiliate, representing organized building craftsmen; the Builders' League, composed of contractors in the building construction field; the City Council and municipal employes; and the building material dealers.

According to E. J. Simon, Director of Vocational Education for the City schools, who conceived the idea of extending class work to the erection of a modern home, all factions in the building industry recognized the need for training young men in the building trades, and subordinated any differences of opinion to the educational undertaking.

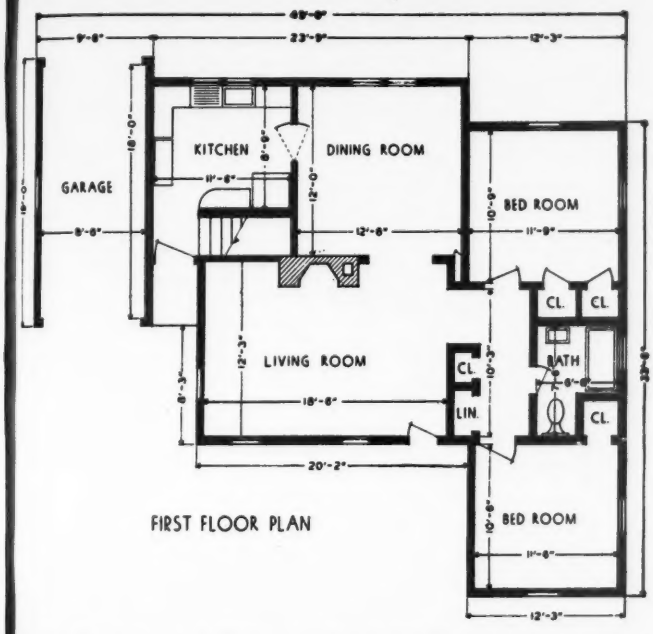
Vocational training has been a popular course of study in the Champaign schools. V. L. Nickell, Superintendent of Schools, several years ago disagreed with those persons who felt that the sole function of public schools is to prepare boys and girls for college—a tenet unusually prevalent in Champaign because the influence of the University of Illinois, located in the adjacent city of Urbana, permeates the community. The school superintendent found that a large percentage of the high school students had neither plans nor ambition to enter a university. Also, he discovered that many students who showed apathy toward the abstract problems of the class rooms gave alert attention to the same problems when presented as a part of practical shop work.

"We have found," said Mr. Simon, who was placed in charge of the vocational training work, "that some of our most intelligent students must express themselves through work done with their hands. It is not uncommon to have a student who is indifferent toward classroom geometry show extraordinary mathematical skill in laying out sheet metal or other mechanical work."

The same need for training boys in the building trades was expressed by James W. Dunn, gray haired patriarch of Champaign's Building Trades Council. A half century has passed since Jim learned the plastering trade, and twenty years since he took over the work as head of the Trades Council. Notwithstanding that his two sons—the younger 32 years old—are plasterers who learned their trade as indentured apprentices, Jim favors a combination of school work with apprenticeship.

He believes that if the building industry is to resume normal levels and if the unions are not to be weakened by lack of membership, some way must be found to bring young blood into the crafts. The average age of all members of the building trades unions in Champaign, he pointed out, is "well above forty"—how much above 40 he did not say, but another source places the figure at 55 years.

Mr. Simon said that the idea of having high school students erect a house as a part of their vocational training did not originate with him. It has been tried elsewhere. However, he said, the Champaign project is the first undertaking in which all local factions which might



COMPLETED house built by vocational training students at Champaign, Illinois, Senior High School. The Champaign Board of Education, City Council, building trades council, contractors association and material dealers cooperated to make this educational project possible. Architectural drawing classes prepared eighteen drawings for this project.

be interested in or affected by the work sponsored the project. All factions are represented on a supervisory board called the Central Advisory Committee on Apprenticeship: the contractors by the president and two additional elected members; the craftsmen by Mr. Dunn and two elected members; the public school system by Superintendent of Schools Nickell and Mr. Simon; and the National Re-employment Service by a single member.

The house was built on credit. The owner of the lot and the building material firms agreed to wait for their money until the structure was sold. They waived interest on the indebtedness. The Board of Education advanced money with which to pay the necessary outside labor—all at the prevailing wage—with the understanding that the taxpayers are to be reimbursed from the proceeds of the sale. The lot cost $700, the materials about $3,500. Sealed bids are being received for the purchase of the house and lot, and Mr. Simon believes that some will run as high as $5,500. The profit will be used as a building fund with which to start next year's house.

Before construction was commenced, it was agreed with the Builders' League that the building would not be sold at a price which was lower than it would cost if erected by a local contractor.

The design of the exterior of the house follows that of the prize winner in a contest for small homes conducted by an architectural magazine. Some changes were made in the interior design by the architectural drawing class. Eighteen working drawings were prepared by the students, and checked by their instructors.

A good type of frame construction, embodying many of the best features of present-day building practices, but retaining definite limitations on cost—a home typical of the kind the boys will build when they are journeymen—was decided on.

The home is insulated. Exterior walls are protected with one-inch Celotex Vapor-seal Sheathing and all of the walls, both exterior and interior, have half-inch Celotex lath. Heat is supplied by a coal-burning hot air furnace, which has an electric fan to force circulation, and which is equipped to add moisture during the winter months. The foundation is monolithic concrete. The roof is of asphalt shingles.

Work on the home was started in November, 1937. Adhering to the real purpose of the project—that of teaching the building trades—the students were not called upon to do work which was not usefully instructive. The basement was dug with purchased labor. However, the boys were permitted to do all work—some of it requiring considerable skill—which afforded an opportunity to "learn by doing."

The students worked at the house only three hours in the afternoons. Their mornings were taken with other studies. Most of the actual, on-the-job work was done by the carpentry class, although the students in the electrical classes and in sheet metal work made their contributions. Working from the school-drawn blueprints, the various shop classes manufactured all of the millwork, excepting window sash and three interior doors which were purchased as there was insufficient time to complete all of the work before the school year ended. The sheet metal school-apprentices made and installed the gutters, downspouts and ventilating ducts.

In the Champaign schools' vocational training there is an unusual blending of theory and practice. Wallace Abernathie, who teaches carpentry, is a college graduate, and as must all instructors, holds an Illinois teacher's certificate. Likewise, Mr. Abernathie holds a card in the carpenters' union, and works as a journeyman carpenter in the summer months. Forest Moses, who teaches electricity, is likewise a craftsman.

As the Champaign school-built home was a pioneering effort, new problems had to be met and precedents established. Plumbing could not be installed without a city permit. This could be issued only to a qualified plumbing contractor. The plumbing contractors met this obstacle by designating one of their members to take out the permit, and to assume general direction and responsibility for the work. Although the fee for the permit is relatively small, the City Council generously waived it. The city plumbing inspector placed himself at the disposal of the schools to give advice and aid.

Mr. Simon says that the students were not able to install the plumbing. Some of the work, such as wiping joints on lead pipe, called for a skill none had. However, the boys were allowed to assist the plumber who did the work, and in this way acquired a fundamental understanding of water and drainage systems.

Plastering, too, required a technique beyond the ability of the students. The boys found the Celotex lath easy to install, Mr. Simon says, and they had sufficient skill

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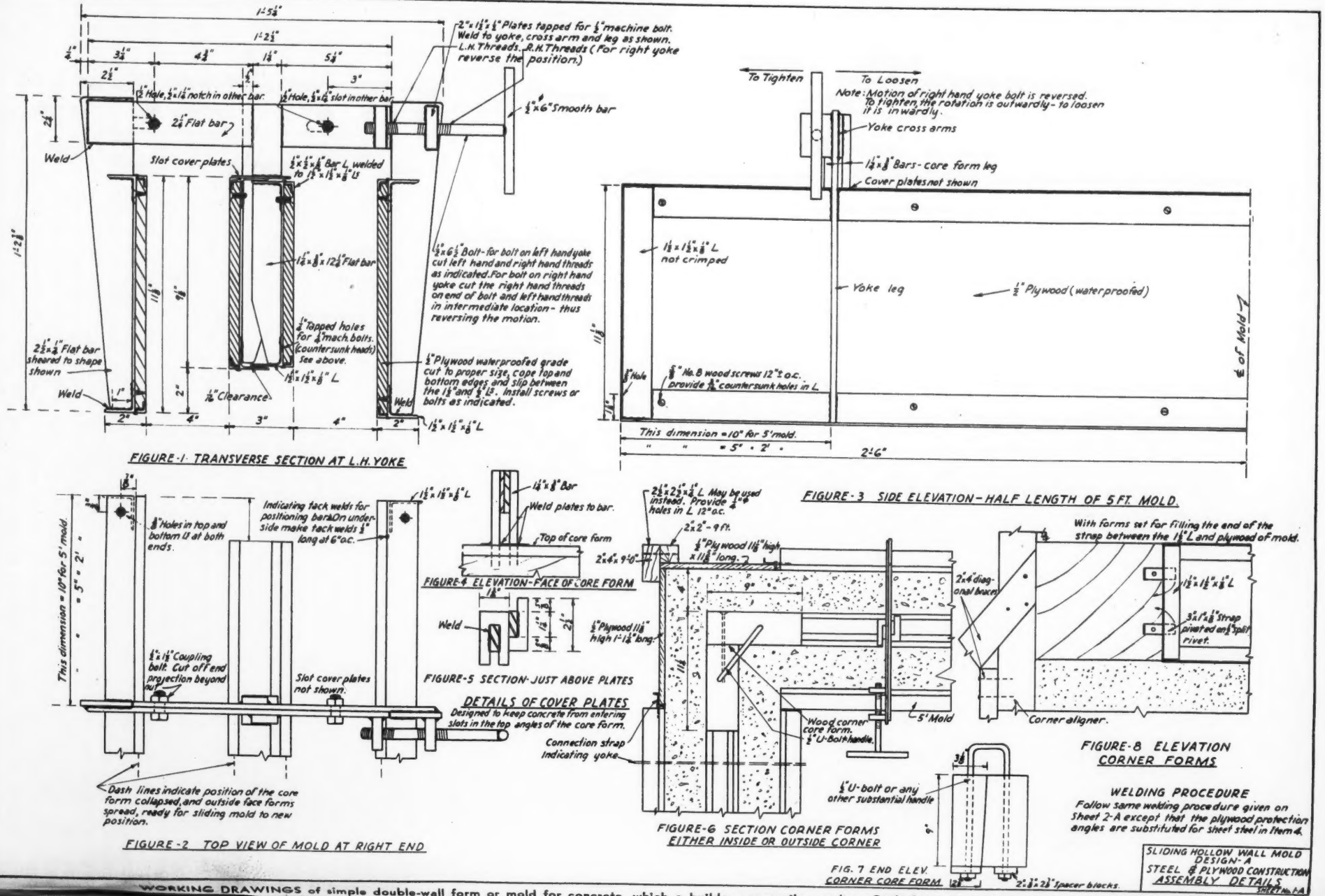
1'-5¼"
1'-2½"
2" x 1½" x ⅛" Plates tapped for ½" machine bolt. Weld to yoke, cross arm and leg as shown. L.H. Threads. R.H. Threads (For right yoke reverse the position.)
½" Hole, ½" x ¼" notch in other bar.
½" Hole, ½" x ¼" slot in other bar.
2¼" Flat bar
½" x 6" Smooth bar
Weld
Slot cover plates
½" x ½" x ⅛" Bar L welded to 1½" x 1½" x ⅛" L's
½" x 6½" Bolt - for bolt on left hand yoke cut left hand and right hand threads as indicated. For bolt on right hand yoke cut the right hand threads on end of bolt and left hand threads in intermediate location - thus reversing the motion.
1¼" x ⅛" x 12½" Flat bar
¼" Tapped holes for ¼" mach. bolts. (countersunk heads) See above.
2½" x 1" x ⅛" Flat bar sheared to shape shown
½" Plywood waterproofed grade cut to proper size, cope top and bottom edges and slip between the 1½" and ⅝" L's. Install screws or bolts as indicated.
½" x 1½" x ⅛" L
Weld
¼" Clearance
1" Clearance
2" 4" 3" 4" 2"
FIGURE-1 TRANSVERSE SECTION AT L.H. YOKE
To Tighten
To Loosen
Note: Motion of right hand yoke bolt is reversed. To tighten, the rotation is outwardly - to loosen it is inwardly.
Yoke cross arms
1½" x ⅛" Bars - core form leg
Cover plates not shown
1½ x 1½ x ⅛" L not crimped
Yoke leg
½" Plywood (waterproofed)
½" Hole
⅜" No. 8 wood screws 12" ± o.c. provide ⅜" countersunk holes in L
This dimension = 10" for 5' mold.
" " = 5' - 2' "
2'-6"
FIGURE-3 SIDE ELEVATION - HALF LENGTH OF 5 FT. MOLD.
⅜" Holes in top and bottom L's at both ends.
Indicating tack welds for positioning bars. On underside make tack welds ½" long at 6" o.c.
1½" x 1½" x ⅛" L
This dimension = 10" for 5' mold. " 5' - 2' "
¼" x 1½" Coupling bolt. Cut off end projection beyond nut.
Slot cover plates not shown.
Dash lines indicate position of the core form collapsed, and outside face forms spread, ready for sliding mold to new position.
FIGURE-2 TOP VIEW OF MOLD AT RIGHT END
1¼" x ⅛" Bar
Weld plates to bar.
Top of core form
FIGURE-4 ELEVATION - FACE OF CORE FORM
Weld
½" Plywood 1⅛" high 1'-1½" long.
FIGURE-5 SECTION - JUST ABOVE PLATES
DETAILS OF COVER PLATES
Designed to keep concrete from entering slots in the top angles of the core form.
2½" x 2½" x ¼" L May be used instead. Provide ½" ø holes in L 12" o.c.
2" x 2" - 9 ft.
⅝" Ply wood 11⅛" high x 11⅝" long.
2" x 4" x 9'-0"
9"
Wood corner core form.
½" U-Bolt handle.
Connection strap indicating yoke
5' Mold
2" x 4" diagonal brace
With forms set for filling the end of the strap between the 1½" L and plywood of mold.
½" x 1½" x ⅛" L
3½" x 1⅛" Strap pivoted on ½" split rivet.
Corner aligner.
FIGURE-6 SECTION CORNER FORMS EITHER INSIDE OR OUTSIDE CORNER
FIGURE-8 ELEVATION CORNER FORMS
½" U-bolt or any other substantial handle
FIG. 7 END ELEV. CORNER CORE FORM.
2" x 2½" x 2½" Spacer blocks.
WELDING PROCEDURE
Follow same welding procedure given on Sheet 2-A except that the plywood protection angles are substituted for sheet steel in Item 4.
SLIDING HOLLOW WALL MOLD DESIGN - A
STEEL & PLYWOOD CONSTRUCTION
ASSEMBLY DETAILS
SHEET No. 1-A

WORKING DRAWINGS of simple double-wall form or mold for concrete, which a builder can easily make. Such forms have been used successfully.

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Molds for Hollow Walls

MOST concrete men are familiar with the hollow double concrete wall and the molds or machines used in building it. The idea of incorporating a continuous air space in concrete walls for insulation dates back many years but it was not until about 1915 that commercially manufactured molds designed for constructing air space walls were placed on the market.

The two best known molds were made by the Van Guilder Double Wall Company, Rochester, New York, and the Universal Mold Company, North Milwaukee, Wisconsin. From 1920 to 1927 these companies sold a considerable number of molds which were used throughout the country for erecting small structures such as houses, barns, garages, milk sheds, etc.

There are a number of hollow double wall structures built every year and there have been evidences lately of reviving interest in this type of construction, particularly in small towns and rural communities where labor conditions are especially favorable to low costs.

In 1934 the Development Department of the Portland Cement Association, after considering various types of wall construction, selected some for study as to costs and promotional possibilities under existing building practices. The hollow double wall type of construction was included.

First, a condition survey was made of approximately 150 hollow double wall houses built mostly with Van Guilder molds located in Minnesota, Ohio and Pennsylvania. Examination of these houses showed them to be in excellent condition and well liked by the owners or occupants. Following this survey, certain field laboratory investigations were conducted primarily with respect to design of suitable mixes, the required setting time between courses or lifts, which factor affects speed of construction and cost. In addition, laboratory tests were made at the University of Illinois on the compressive and transverse strengths of such walls and at the University of Minnesota on thermal conductivity. Data were also obtained on the cost of constructing such walls.

These studies further demonstrated that the hollow double wall is excellent construction for houses and small buildings. Weathertightness can be obtained by either stuccoing or carefully painting the exterior. It is satisfactory to plaster directly to the inside concrete surface. The insulating factor may be conveniently and economically increased when necessary by filling the air space with granulated cork or similar material. It was also concluded that the construction method is best adapted for economical use under the wage and labor conditions generally found in small towns and rural areas; that it presents a practical system for the farmer or rural contractor who works with a small gang and builds only a small amount of work and therefore requires simple, inexpensive equipment.

A STIFF concrete mix is tamped in two 4½-in. layers to fill the mold which then may be loosened and moved to a new position; the tamped concrete is immediately self-sustaining.

The Universal mold can now be purchased commercially. However, in order to make this a more available type of construction, it seemed essential to design a mold which the contractor could have built in a local machine shop. The accompanying drawings and photographs illustrate the molds which were designed and successfully demonstrated by the Development Department last year.

(Continued to page 82)

A SET of forms includes the five-foot and two-foot molds, corner plates and corner core block. The iron angles or wood corner aligner posts are not shown.

WORKING DRAWINGS of simple double-wall form or mold for concrete, which a builder can easily make. Such forms have been used successfully.

Cost Changes in Chicago Building

1926 and 1938 Brick and Frame Houses Compared

By E. M. CRAIG
Sec'y. Building Construction Employers Association of Chicago, Inc.

THE construction industry, in its entirety, from the raw material producer through the essential steps of distribution to the contractor, is perhaps second only to agriculture in importance. Certainly its almost negligible volume is one of the chief retarding factors to recovery at the present time. The effect of the trend of building costs is often questioned.

The following paragraphs present the findings and supporting evidence concerning the question of the present day cost of construction in the Chicago area, as compared to the year 1926, and intervening years, and the relative part played by the several major factors of cost in any changes that might have taken place.

Limitations of the Study

The wide variety in the kinds and types of building compelled, out of practical necessity, the selection of single types for study. The types selected were a $5,000 frame residence and a $6,000 brick residence. A further problem involved, that required specific classifications, is the fact that different types of construction require different ratios of material and labor, and therefore present different price problems.

In the text the cost of construction is broken down into four broad classifications: Materials, Labor, Overhead and Profit, and Taxation. The Cost Index for Materials is based on the prices (May 1, 1938) of common brick, lumber (1″ x 6″, 2″ x 10″, 2″ x 4″, No. 2 S.P., lots of 5000 B.M.), cement, structural steel, plumbing fixtures, steam heating equipment (including pipe and boilers), hardware (rough and finish), roofing and glass.

The Cost Index for Labor is based on union scale rates for common labor, brick-layers, carpenters, iron workers, plumbers, steam fitters, painters, electricians, sheet metal workers and tile setters. While it may be argued that not all residential work requires union scale wages, we do assume that there is a fairly constant ratio between prices paid union labor and openshop labor at both the dates in question (1926-1938).

The Overhead and Profit Index includes general operating overhead, architect's fees, licenses and other fees, and profit if any.

The Taxation Index includes: workmen's compensation, sales tax, unemployment insurance and the employers' contribution to old age benefits.

Summary of Conclusions

(1) The cost of construction in the Chicago area for the type of building under consideration is today 7.57 per cent higher on the frame building and 8.69 per cent higher on the brick dwelling than it was in 1926.

(2) Since material costs are 12.5 per cent on the frame dwelling and 10.8 per cent on the brick dwelling, less today than in 1926 and overhead is but slightly higher, the increase can be attributed to higher labor costs and increased taxation.

(3) The responsibility for the gross increase in cost of construction in 1938 over 1926 is divided as follows: overhead 9 per cent for both classes, labor 49 per cent on the frame building and 47 per cent on the brick building, and taxation 42 per cent on the frame building and 44 per cent on the brick building.

Attention is called to the chart depicting "Construction Cost Changes." This was developed from the Index of Construction Cost Data furnished by E. H. Boeckh & Associates, of Cincinnati.

Materials

The materials in a frame residence costing $5,000 and a brick residence costing $6,000 in 1926 would have cost on the average, $2,293.50 and $2,571.60 respectively. Those same materials today would cost on the average $2,007.79 and $2,294.87; a net decline over the period of 12.5 per cent and 10.8 per cent respectively in spite of the absorption of increased transportation costs, increased and new taxes by the material suppliers.

Of interest to the potential builder [owner] as well as the broader economic view is the portion of the dollar spent that goes to the material supplier. In 1926 this was 45.87 per cent on the frame building and 42.86 per cent on the brick building; in 1938, it was 37.33 per cent on the frame building, and 35.17 per cent on the brick building, a decrease of 18.6 per cent and 17.9 per cent respectively.

The observations based on the averages are borne out in the attached tabulation showing actual prices of the more common materials for the two years under discussion.

Overhead and Profit

This item on a $5,000 frame residence and a $6,000 brick residence would have amounted to $763.00 and $915.60 respectively in 1926, and on the same buildings in 1938 would be $820.22 and $994.51. This is an increase of 7.5 per cent on the frame building and 8.6 per cent on the brick building, brought about by the increased cost of doing business under present conditions. In terms of the building dollar this item took 15.26 cents in 1926 and 15.25 cents in 1938.

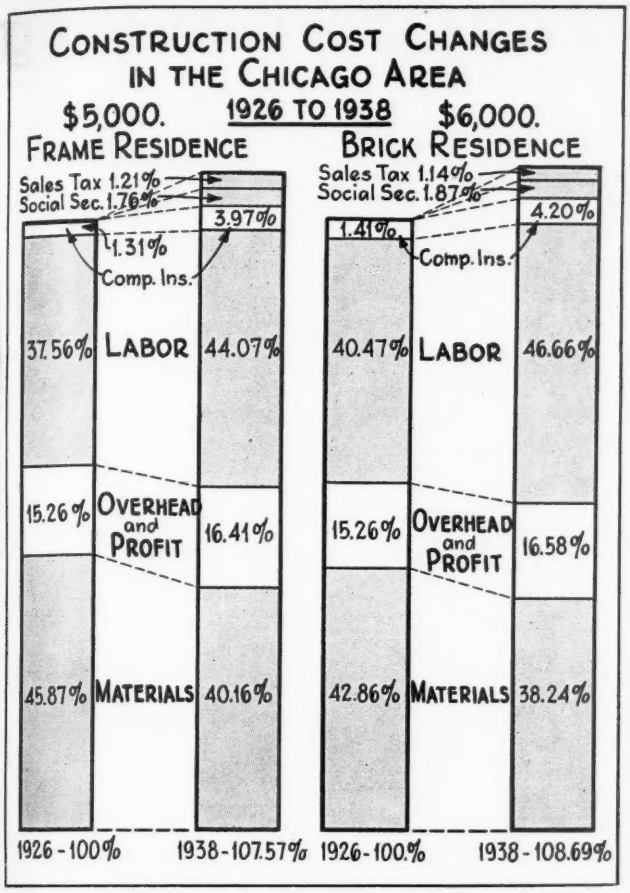
Labor

In 1926 the cost of labor on these two types of residences amounted on the average of $1,878 on the frame residence and $2,428.20 on the brick residence. In 1938 to build this same building, labor would receive $2,203.57 and $2,799.64 respectively. This is an increase of 17.3 per cent on the frame and 15.3 per cent on the brick.

This increase on the average is substantiated by the tabulation of the union scales for these two years.

Expressed in terms of the building dollar, labor in 1926 would have received 37.56 cents on the frame construction and 40.47 cents on the brick construction. At this point an interesting fact makes its appearance. In 1938 labor would receive 40.97 cents on the frame construction and 42.93 cents on the brick construction, or about the same relative proportion of the total spent on building that it received in 1926.

The fact that labor would receive in total wages 17.3 per cent and 15.3 per cent more for the same buildings in 1938 than in 1926 but would receive 9.1 per cent and 6.1



per cent as a proportion of the building dollar in 1938 than in 1926 raises the very pertinent question—why? The answer to which may be the partial answer to the increased costs of building and the resulting lack of activity.

Taxation

As a matter of convenience all forms will be lumped together including workmen's compensation. (Income tax is not included since it is dependent on profit; nor are fees, licenses, etc., they being classed as overhead.) In 1926 on a $5,000 frame residence and a $6,000 brick residence this item would have consisted solely of workmen's compensation and would have amounted to $65.50 and $84.60 respectively. In 1938 this item not only includes workmen's compensation but also unemployment insurance, old age benefits and sales tax. For the same buildings in 1938, this cost would be $346.92 and $432.38 respectively, an increase of 429.6 per cent on frame construction and 411.1 per cent on the brick construction. In this connection it must be understood that in the case of old age benefits the rate progressively increases and at the close of the next decade will be three times its present rate.

An answer to the question raised under the labor discussion may be provided when the proportion of the building dollar taken by taxes is examined. In 1926 taxation took 1.31 cents and 1.41 cents of the building dollar on the two types of buildings under consideration. In 1938 taxation would take 6.45 cents and 6.63 cents. This is an increase of 392.3 per cent and 356.0 per cent respectively.

Whether the increased proportion of the building dollar taken by taxes should be considered as being absorbed by the material suppliers, who are getting less, or whether it should be considered in the light of an added increment available to labor, should the tax proportion be less, is a matter of viewpoint and raises questions beyond the scope of this study. However, it should be remembered that material prices are set by the stress of competition, while labor rates are set by collective bargaining.

The methods by which these two costs are determined would at least suggest the opinion that taxation is taking a portion of the building dollar that might otherwise be available to labor.

* * *

The Following Tabulations Show Comparable Costs of Building Between the Years 1926 and 1938.

On the $5,000 Frame Residence

	1926	1938
Materials	$2,293.50	$2,007.79
Overhead and Profit	763.00	820.22
Labor	1,878.00	2,203.57
Taxation:		
Workmen's Compensation	65.50	198.47
Sales Tax	None	60.24
Social Security	None	88.21
Totals	$5,000.00	$5,378.50

On the $6,000 Brick Residence

	1926	1938
Materials	$2,571.60	$2,294.87
Overhead and Profit	915.60	994.51
Labor	2,428.20	2,799.64
Taxation:		
Workmen's Compensation	84.60	251.73
Sales Tax	None	68.47
Social Security	None	112.18
Totals	$6,000.00	$6,521.40

The Following Tabulations Show Comparative Distribution of the Building Dollar Between the Years 1926 and 1938.

On the $5,000 Frame Residence

	1926	1938
Materials	$ .4587	$ .3733
Overhead and Profit	.1526	.1525
Labor	.3756	.4097
Taxation:		
Workmen's Compensation	.0131	.0369
Sales Tax	None	.0120
Social Security	None	.0164
Total	$ 1.0000	$ 1.0000

On the $6,000 Brick Residence

	1926	1938
Materials	$ .4286	$ .3519
Overhead and Profit	.1526	.1525
Labor	.4047	.4293
Taxation:		
Workmen's Compensation	.0141	.0386
Sales Tax	None	.0105
Social Security	None	.0172
Total	$ 1.0000	$ 1.0000

The cost of construction in 1938 is 7.57 per cent on the frame residence and 8.6 per cent on the brick residence more than in 1926.

Since material costs are 12.5 per cent and 10.8 per cent less today than in 1926, and overhead is but slightly higher, the increase can be attributed to higher labor costs and increased taxation.

Of the gross increase in costs of $664.19 on the frame residence and $798.13 on the brick residence, overhead is responsible for 9 per cent, labor 49 per cent-47 per cent

(Continued to page 82)

Modernizing Is Still An Important Field

Volume of Alterations Shows a Month to Month Increase; More than 20% of Building Dollar Spent on Remodeling

STATISTICS for the first months of this year indicate that modernization of existing property including additions, alterations and repairs is still an important factor in the total building volume. Moreover, under the stimulus of reinstated Title I of the FHA, the total amount being spent for remodeling is keeping pace with the recent increase in new building and is steadily approaching that of a year ago. The modernization market now amounts to between 20 and 25 percent of the building dollar. Although it has not recently received the publicity which was given it several years back, this field should not be overlooked by industry men.

That there is still much to be done to make the homes of the country up-to-date is dramatically pointed out in one of many fields by the Plumbing and Heating Industries Bureau. It states that despite the fact that America is generally regarded as the land of the bathtub, only approximately 11,000,000 of the 25,200,000 dwelling units in the United States are equipped with bathtubs—calling attention to the vast potential volume of modernization work under Title I of the National Housing Act.

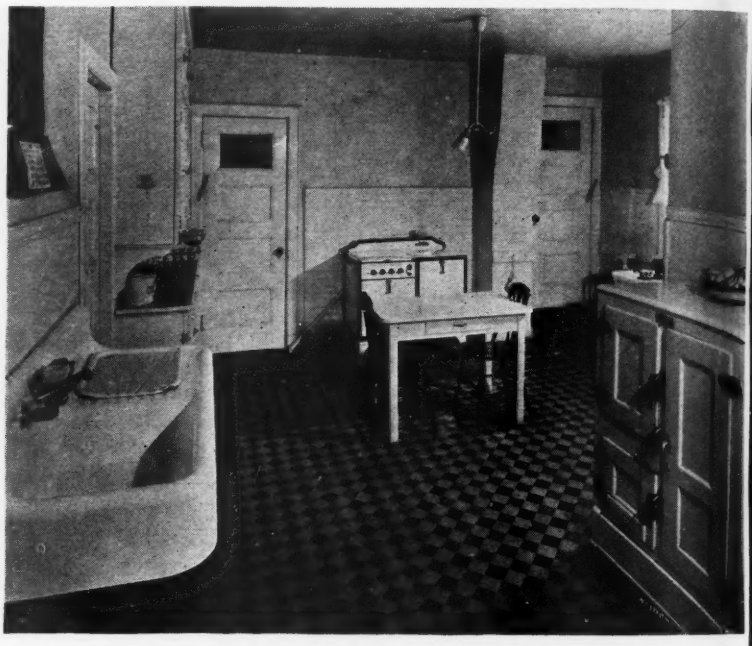
Whereas 72 per cent of city dwellings have bathtubs, less than 14 per cent of farm homes have this modern convenience. Less than 10 per cent have indoor flush toilets. About 20 per cent have cold water piped into the house but only 10 per cent have running hot water in the house.

Among the states ranking highest in the percentage of bathtubs in farm homes are: California, 71.58 per cent; Massachusetts, 47.82 per cent; Rhode Island, 43.60 per cent; Oregon, 42.15 per cent; Washington, 41.62 per cent; Connecticut, 33.93 per cent; and Florida, 28.15 per cent.

In an address last month delivered to the Southwest Regional Conference of the National Association of Real Estate Boards, George I. Noyes pointed out that repairs aiding eye appeal are surest to pay. He said, "Interior and exterior decorating, such as painting, papering, etc., increase the eye appeal of a house or apartment building and almost invariably their cost can be recaptured. Repairs to foundation and structural replacements, which are not easily discerned by the average purchaser, reflect added value to a lesser degree. Changes having a tendency to make the house suitable for a higher type occupancy, be they structural changes, modernization, changes in floor plan, removal of partitions, installation of modern plumbing and heating equipment, or other change will, in most instances, cause an increment in value in excess of cost."

As an example of just such a change, "Before" and "After" illustrations of a kitchen modernization are shown on the two pages of this article. It is typical of thousands of similar transformations which can be sold in homes today.

The original kitchen had many features that would classify it as a problem room: Painted walls of scored plaster wainscoting, with plain plaster above, unsightly and difficult to clean; two heavy, unattractive doors leading from the kitchen, with top panels of frosted glass; the room illuminated by suspended ceiling lights, which had formerly served the double function of supplying gas as well as electricity; floor cabinets 15 inches deep, and glass doored wall cabinets, of the same approximate depth. The room was heated by means of a hot air flue in the floor beneath the sink. No ventilation was provided for the gas stove.



↑ BEFORE

THE kitchen of this home in Glen Ridge, N. J., like thousands of others, lacked the appeal of modern efficiency. Everything about it was old fashioned and very unattractive.

A geometric tile design of outmoded linoleum covered the floor, making the room appear small. An icebox placed adjacent to the back door, and a breakfast group of unmatching table and chairs, in the center of the kitchen made all kitchen activity extremely inconvenient. The sink was of porcelain, a hanging wall type.

As a first step in the remodeling, the walls were sanded to a smooth plaster finish and covered with Sealex wall linoleum. All trim was omitted and the rounded corners into which the door and window frames were set were also covered with linoleum. An interesting modern note was struck by hanging new doors flush with the walls, covering them with wall linoleum, and finishing the doors with a narrow metal edging. Bar handles of chromium were used on these doors. The ceiling was

AFTER

COMPLETE new interior has brought it up-to-date. Proper lighting, easily cleaned walls and floors, convenient arrangement and pleasing color are parts of the thorough rejuvenating.

calcimined the same color as the linoleum walls, in order to add size to the room. A new wall was constructed to cover a jutting chimney and, at the same time, to form one side of an alcove for a new, modern flat base stove. The over side of this stove niche was formed by a second reconstructed wall, paralleling the first.

The lighting was both direct and indirect. The cabinet working area was illuminated through frosted glass in a soffit over the cabinets; the flush ceiling light was placed within the stove niche, and modern chromium tubular wall lights were installed for general illumination. The reconstructed cabinets were deeper than those they replaced, the floor cabinets measuring 2 feet and the wall cabinets 13 inches. These had plain solid doors, with modern hardware. The cabinet tops were covered with plain Sealex linoleum of medium gauge, installed over saturated felt on a wooden base. This featured the popular coved splashback, with metal trim.

The heating in this remodeled kitchen was brought up to date by relocating the hot air flue within one of the cabinets constructed with a grille front. Adequate ventilation was also provided by locating a vent in the chimney, next to the stove alcove. This was operated by an electric fan controlled by a switch just inside this niche.

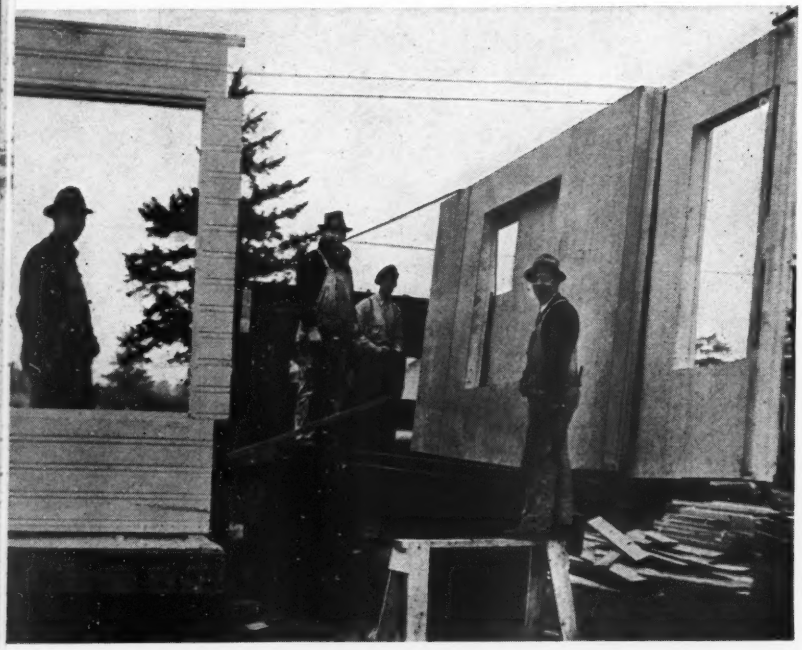
The floor treatment tended to increase the room size materially. A Veltone marbelized linoleum pattern of medium gauge was used, cemented over 1 lb. lining felt, double-cemented over double wood underfloors. "Personal-ized" insets were worked into the linoleum field in the form of feature strips and discs, the discs harmonizing in color with the linoleum used on the counter tops. An electric refrigerator was installed next to the pantry door and a breakfast group placed adjacent to the back door, where the icebox had formerly stood. This afforded a clear floor space for meal preparation and other kitchen activity. The table and chairs in this group were of tubular chromium construction and the chairs were upholstered in a washable fabrikoid. The table top was covered with the same color of plain linoleum as was used on the cabinet work. The new porcelain sink was a modern counter-sunk type.

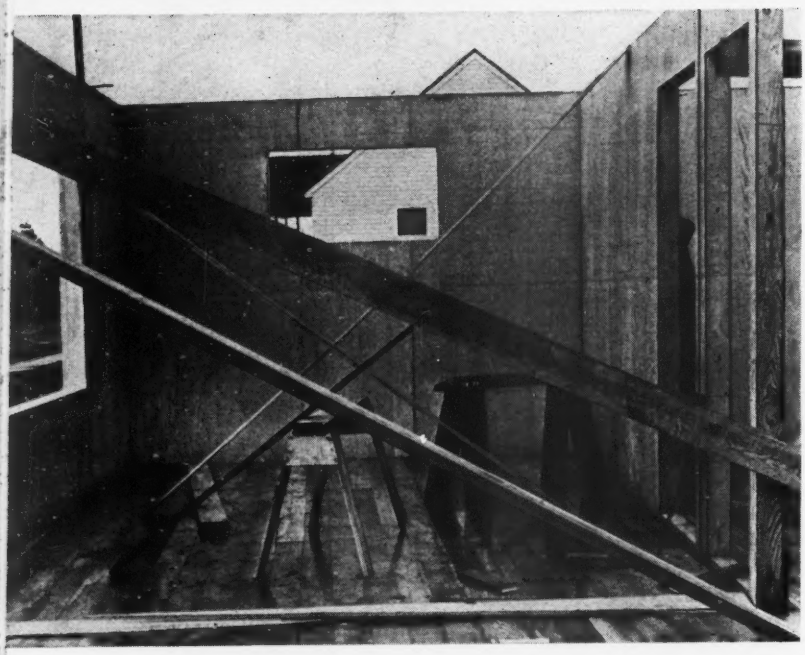
The final step in the successful rebirth of this kitchen was the installation of Venetian blinds, which assured abundant daylight and added to its crisp, modern appearance.

Remodeling jobs similar to this Glen Ridge kitchen are a part of every building man's routine, and he invariably comes through with a contribution that makes life more colorful and more livable.

Use of Plywood Cuts Costs, Saves Time

Tacoma Lumberman and Builder Develop 5-Room Shop-Fabricated Panel House for $2,950; Built in 400 Hours





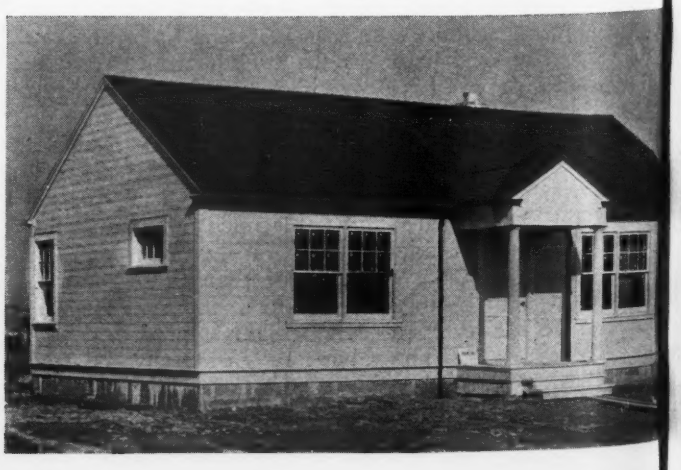
HOW generous use of Douglas fir plywood in shop pre-fabrication of wall sections permitted them to construct a five-room modern home to sell complete at $2,950 is revealed by John Buffelen, well-known Tacoma, Washington, lumberman, and George M. Brewer, experienced local builder. The house, modern in every respect, is 22′x24′ on a lot 58′x120′. It has two bedrooms, kitchen, dinette, bath, living room, and both front and back porches.

The wall sections, with frames in place, were pre-fabricated at the Buffelen plant. Twenty-four hours after these sections were trucked to the site the front and back porches were on, cornices were built, the chimney was up, and the roof was completely shingled.

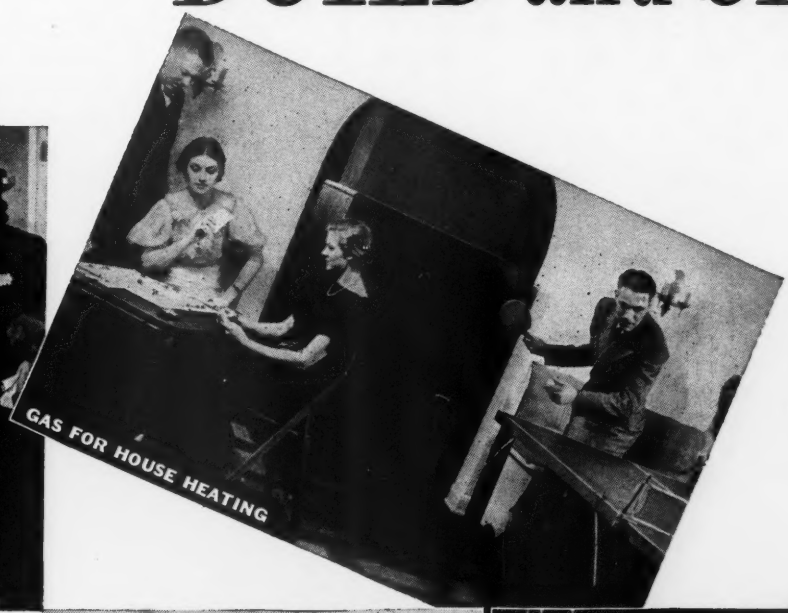
The wall sections consist of standard 2x4 studs, 16″ on center, with plywood wallboard nailed to both the inside and outside face of the studs. Furring strips ¾″ x 1-⅜″ were nailed vertically over the outside plywood, and then a novelty siding was nailed over the furring strips to the studs. This construction creates a double air space, and excellent insulation values. The total number of hours of labor, including plant fabrication, staking out building site, form work, and total carpentry work to complete the house was 435 hours. Mr. Brewer states that this can easily be reduced to 400 hours on the next house of this type. The plans were approved by the FHA so that it was financed through an insured mortgage.

Interior panel joints were covered with attractive moldings. Various finishes were used for the interior plywood. Ceilings in general are painted with one of the new, special two-coat paint finishes, living room walls are stained and varnished, the kitchen is finished natural and varnished, while the bedrooms and bath are painted.

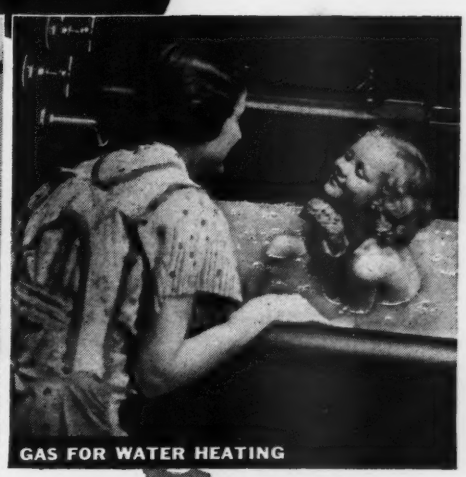
LEFT, top to bottom: Truck arriving at 11:00 a.m.; sections were unloaded and set in place in 55 minutes. Temporary bracing to hold walls in place until ceiling joists are placed, rafters put up, and roof sheathed. Three hours after the delivery truck left the job; ceiling joists placed, rafters up; gables studded, ready for siding. Below: The finished house, ready for landscaping.



GAS *can help you* BUILD and SELL



The new gas appliances are keyed to modern living standards



WHY the great new swing to Gas in the current building activity? *First* — striking improvements in styling, construction, and efficiency of gas appliances. *Second* — gas is more economical than ever.

These factors have given builders a new appreciation of the *exclusive* advantages of Gas in building and *selling* modern, easy-to-keep homes.

Simple, compact Gas equipment is less expensive to buy and easier to install. The absence of complicated mechanisms and delicate parts assures lasting, trouble-free operation. Day and night Gas Company service doubly insures client satisfaction.

Your local Gas Company technicians will gladly give you full information and detailed specifications on the new gas ranges, refrigerators, and water heating and house heating equipment.

LET Gas DO THE 4 BIG JOBS
COOKING
WATER HEATING
REFRIGERATION
HOUSE HEATING

Be sure the gas appliances you specify carry the Approval Seal of the American Gas Association Testing Laboratories.

AMERICAN GAS ASSOCIATION

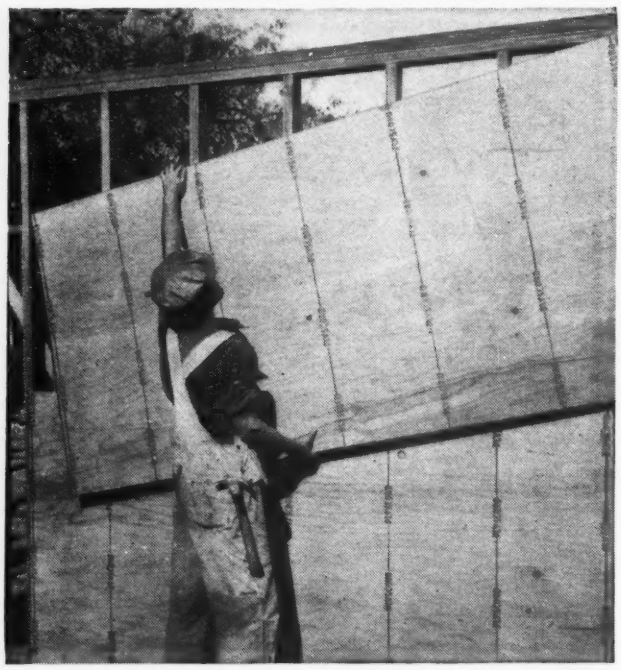
New Products Contribute to Better Building

Douglas Fir Plywood Sheathing Heads This Month's List of Improved Materials

A SUBSTANTIAL contribution to the current demand for practical low-cost housing is shown in the development of a new grade of Douglas fir plywood sheathing which is being grade-marked and scored under the name Plyscord.

The new grade has been standardized by all members of the Douglas Fir Plywood Association to meet the needs of architects, contractors and builders for a sheathing that is easy to apply, economical to use and which will, at the same time, add strength and rigidity to homes.

Each panel of Plyscord is plainly marked and scored with parallel lines across the panel. The lines are spaced 16 inches apart and when the carpenter lays the panel horizontally over the studs, the lines indicate their exact location for nailing. The scoring is also helpful in locating studding when siding is to be laid over the sheathing.



WORKMAN applying new Douglas fir plywood sheathing.

Plyscord will be available in standard 8 ft. lengths, 32 and 48 inch widths, and in 5/16, 3/8 and 5/8 inch thicknesses.

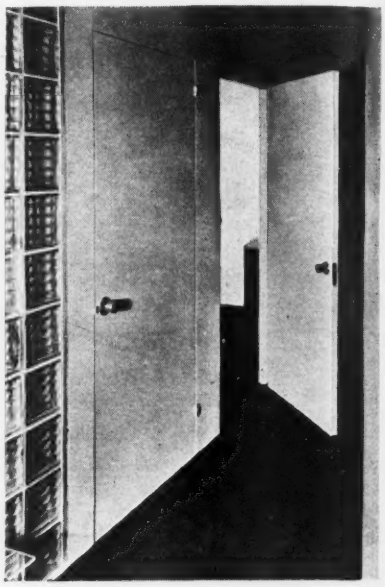
The new sheathing grade has an improved face and presents a solid surface. There are no large knot holes or pitch pockets and the stripping of paper tape is reduced to a maximum of not more than two to each panel.

New Types of Flush Doors

JOHNS-MANVILLE Corp., New York City, has announced several additions and improvements to its line of flush doors, which now includes Wel-built doors, DeLuxe doors, Asbestos Flexboard doors, and a fine custom made flush door which is available on special order. At the present time these products are available in the Johns-Manville building materials districts of Cincinnati, Philadelphia, New York and Boston. They will be released in other areas of the United States before the end of this year.

All the doors are constructed in accordance with the Johns-Manville principle of sealed core construction, which employs a grid core of insulating board and a method of sealing the construction so as to leave no air passages. The doors have extra-wide rails to allow for trimming the top and bottom, and oversized lock blocks are centered on stiles. Standard thicknesses are 1⅜ and 1¾ inches, with other sizes available on special order.

The methods and materials used in the construction combine to make doors that are comparatively light in weight, yet extremely durable, and all tendency to warp, buckle or swell is practically eliminated. J-M flush doors derive their ruggedness from the fact that they are constructed like a beam, the faces forming the stress members and the grid the web section.



RIGHT: Installation showing two of new J-M De Luxe flush doors with painted finish.

Double-Hung Wood Window Unit

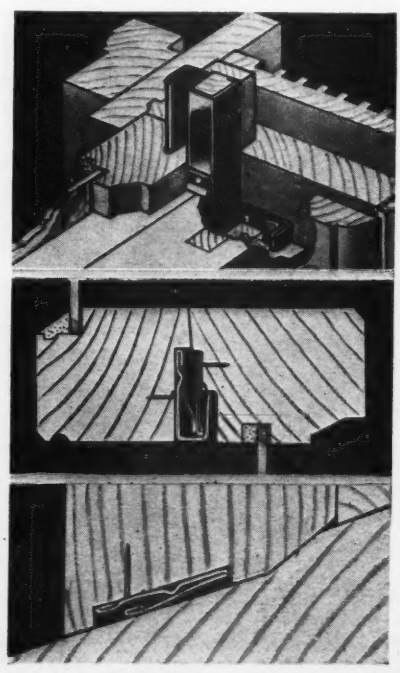
WITH windows becoming increasingly important in modern home building, the Andersen Corporation, Bayport, Minn., has introduced a new Narroline complete double-hung window unit which offers many new and worthwhile features.

Foremost of these new features are the Silver-Seal weatherstrips. They are made of aluminum alloy, electro-chemically treated to give a permanently-lubricated, glasslike surface. Maximum weather-tightness and easy sash operation are assured by the new duplex principle.

Other features are the development of a sash 1½ inches thick, no exposed end wood on the bottom rail, and flat weight counterbalancing to eliminate waste space and permit narrow mullions and trim.

Sash are completely fitted and ready to install with check and bottom rail weatherstrips applied. Side and head weatherstrips are furnished ready to slip in place without danger of crimping or other damage.

Exceptional care has been taken to assure permanent protection for both frame and window against moisture, termites, and decay. For all Narroline units, pentachlorphenol preservative treatment was used with thorough penetration accomplished by full three minute processing.



NEW double-hung window showing, top to bottom, section through jamb, through check rail and through bottom rail.

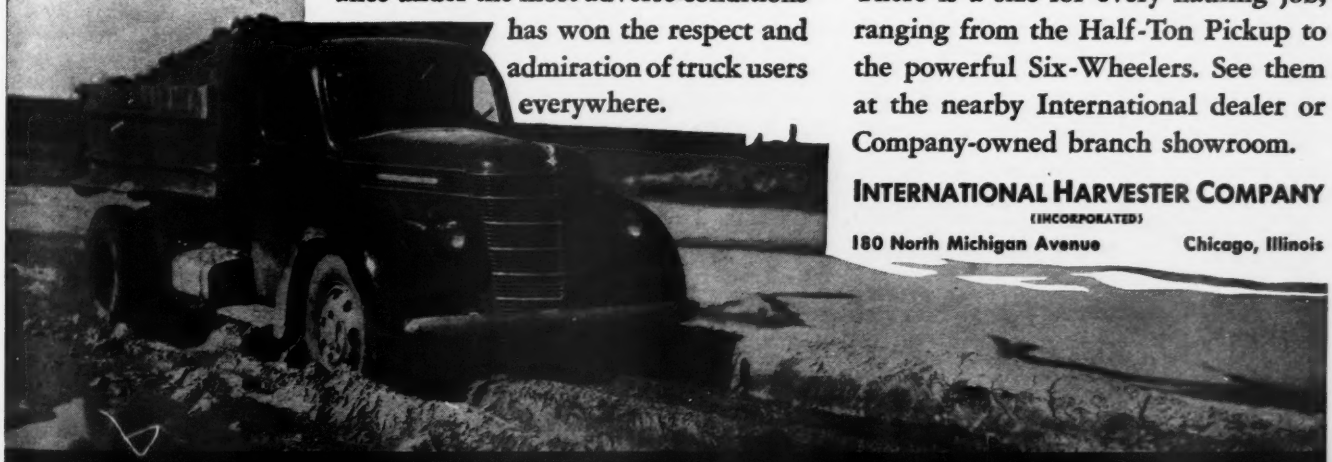
The World's Tough Truck Jobs Go to INTERNATIONAL

Building roads through the Long Beach Harbor oil fields with International Trucks. Scenes show 2 to 3-ton Model D-40's with 5-yd. bodies plowing through the mud holes with their full loads. F. D. Oneal, Long Beach, Calif., contractor, is the owner.

INTERNATIONALS get the hard, heavy jobs because these rugged trucks ask no odds, no matter how tough the going. They are as much at home in mud or muck, sand or water, as they are on the paved road. Their dependable performance under the most adverse conditions has won the respect and admiration of truck users everywhere.

Let International Trucks handle your own hauling. Enjoy the benefits of International performance, economy, long life, and after-sale service. Watch your costs go down and your profits go up when Internationals take over. There is a size for every hauling job, ranging from the Half-Ton Pickup to the powerful Six-Wheelers. See them at the nearby International dealer or Company-owned branch showroom.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois



INTERNATIONAL TRUCKS

New Sound Absorbing Product

A NEW product, Acoustilite, announced by The Insulite Company, Minneapolis, Minn., is offered for use in offices, shops, schools, churches and other public buildings to absorb sound and reduce echo.

Beautiful interiors are also achieved by the application of this new material on walls and ceilings. It is made in two attractive finishes, one with the appearance of soft-surfaced Travertine stone, and the other an open-mesh fabric covering. Both are painted a neutral buff shade, and further decorative stenciling in cold water flat paints may be done without impairing the acoustical properties. Furnished in squares and rectangles of various sizes, the tile-like boards can be arranged to form almost any pattern desired.

As an insulation, Acoustilite effectively combats heat loss from the building in winter and protects against heat entry during the summer months.

ACOUSTILITE absorbs sound.

Metal Window for Residences

A NEW metal window for residences in the traditional American double-hung design has been announced by Campbell Metal Window Corp., Div. of American Radiator & Standard Sanitary Corp., Baltimore Md. Features of this window are its low cost, its complete weatherstripping and its skyscraper type of construction. Being all metal throughout, Model 101 is immune to dampness, heat or other weather conditions. It cannot warp, shrink, leak or rattle. It is completely weatherstripped at the sides, the top, the meeting rail and the sill. Bonderizing at the factory and baked on prime coat of paint make it rust resistant. Hardware and accessories are factory attached. Special brackets are provided on specification for window shades, curtain rods, Venetian blinds, awnings and hinges for operative or decorative shutters. The greater glass area of Model 101 from extremely narrow frame and muntins results in more daylight for the house interior from each opening. It is available in a wide selection of opening sizes. Storm sash and three types of screen are available; storm sash is of a new ventilating type; screens are full outside, half outside, and half inside screen types.

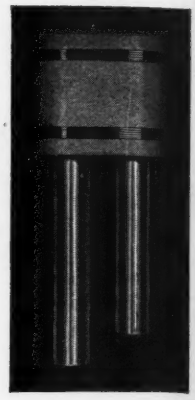
COMPLETELY weatherstripped double-hung metal window.

Short Tube Model Door Chimes

ADDED to the line of chimes made by The A. E. Rittenhouse Co., Inc., Honeoye Falls, N.Y., is the new Sentinel model, especially designed to occupy small wall space. Its smaller size (14" x 6") allows it to be installed in many places where there might not be room for the large models. Though compact in design, it has a beautifully rich deep tone that is equal in volume to the large tubular chimes. It can be heard distinctly throughout the average residence. It is available in both single and double purpose types. The double purpose type sounds a two-note signal for the front door and a single note signal for the side or rear door. The single purpose type has the two-note signal only.

The Sentinel's simplicity of styling gives a pleasing effect and makes it suitable for installation in any type of interior. The chime tubes are brushed brass and the housing is furnished in either statuary bronze with brass or ivory art metal with brass.

It is furnished complete with the special transformer required.



SHORT TUBE Chimes fit in smaller space.

Plastic for Luminous Door Ring

THE new crystal clear plastic, Lucite methyl methacrylate, recently deevloped by the du Pont Company, New York City, is being used for a luminous ring to replace the metal ring escutcheon of a cylinder door lock.

The advantage of this ring is its visibility in the dark. The ring is cast to cover a small amount of luminous material in a groove on the underside. Because of the high cost of the luminous material and in order to reduce to the amount required, maximum magnification is needed. This magnification is afforded by Lucite because of its extreme clarity.

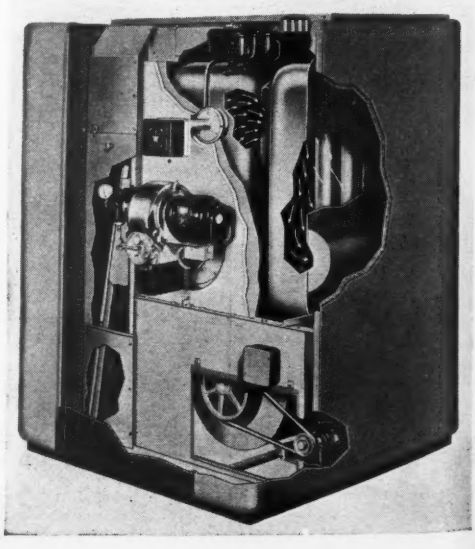
The ring, which comes in two standard sizes, can be installed on any door having a cylindrical lock, and is designed so that it can replace the metal ring now being used.

Automatic Winter Air Conditioning Unit

THE L. J. Mueller Furnace Company, Milwaukee, Wis., has announced the Series Sixty oil-fired winter air conditioning furnace, designed and built to offer the homeowner who wants the combined comforts of automatic oil heat and air conditioning, a compact, highly efficient, and attractive unit, at a price within his means.

Series Sixty units are built in two sizes—the No. 61 having a B.T.U. capacity at register of 110,000, and the No. 62 having B.T.U. capacity of 165,000 at register. The No. 61 is 46 inches deep, 66 inches high, and 48 inches wide; the No. 62 is 53½ inches deep, 70½ inches high, and 57 inches wide.

Some of the outstanding features of the Series Sixty include: die-stamped and seam-welded combustion chamber; radiator with a series of tubes providing considerably increased heating surface; efficient filters of ample area; automatic moisture supply; ready access to all parts; compact construction; efficient, economical operation; attractive design. Any flange-mounted, pressure atomizing type oil burner may be used.



CUTAWAY view of new oil-fired winter air conditioner.

YOU WILL MAKE MORE MONEY WITH

SKILSAW MODEL 87

...as hundreds of builders are doing!

IT'S THE GREATEST BUY IN SKILSAW HISTORY!

- 9 in. blade
- Cuts to a depth of 2⅛ in.
- Cuts 3 in. dressed lumber
- Bevel-cuts lumber 2⅝ in. thick at 45°

$135

More contractors have bought SKILSAW Model "87", immediately after its announcement, than any other new model we have introduced in the past! This instant acceptance is the best kind of proof that Model "87" saves on all construction jobs, large and small! It saws faster, easier, deeper on both straight and bevel cuts—it's the biggest buy and the greatest SKILSAW since we introduced the first portable electric handsaw 18 years ago!

Sold by leading distributors of mine, mill, hardware and contractors' supplies.

SKILSAW, INC., Dept. A, 3314 Elston Avenue, Chicago

214 E. 40th St., New York. 52 Brookline Ave., Boston. 1429 Spring Garden, Philadelphia. 1253 Flower St., Los Angeles. 2065 Webster St., Oakland.

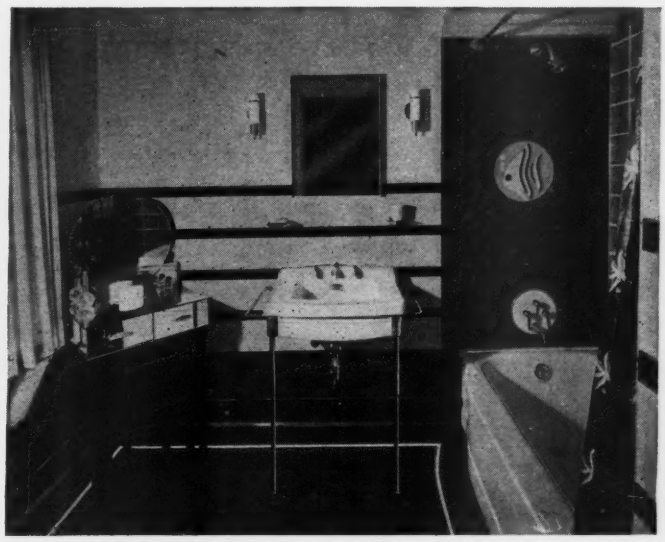
SKILSAW PORTABLE ELECTRIC TOOLS

SAVE MONEY IN EVERY INDUSTRY!

• SAWS • DRILLS • BELT SANDERS • DISC SANDERS • GRINDERS • BLOWERS •

WISE BUILDERS SAY:

"... and the floor is Armstrong's Linoleum"



SALES-BUILDING BATHROOMS *like this are easily achieved with floors of Armstrong's Marbelle Linoleum. The walls are Armstrong's Linowall—a fade-proof and washable linoleum-type wall covering.*

Your prospects know this name—hence the sale is that much easier

POINT out the Armstrong's Linoleum Floors in the houses you have for sale or rent. You don't have to tell prospects about their lasting beauty—we have done all that for you in twenty years of national magazine advertising. This advertising has created acceptance for Armstrong's Linoleum. This acceptance can be one of your strongest helps in making sales.

Armstrong's Linoleum is not expensive, either in first cost or installation. And with five thicknesses and more than 200 designs to choose from, you'll have no trouble picking the right floor for every purpose—and every budget.

Find out today how Armstrong's Linoleum can work for you. Write for free, color-illustrated book of floor ideas for new construction or modernizing. Armstrong Cork Products Company, Building Materials Division, 1218 State Street, Lancaster, Pennsylvania.

RUBBER TILE • LINOTILE (OIL-BONDED) • ASPHALT TILE

Armstrong's LINOLEUM *and* RESILIENT, NON-CERAMIC TILES

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS

3 WAYS TO MAKE MONEY—

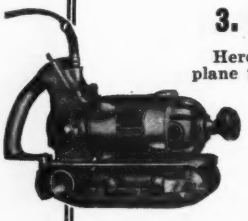
1. FLOOR SURFACING

Be your own boss and make big money with an American Floor Sanding Machine. As much as $25.00 a day is not an unusual amount for the floor surfacing contractor to make. When "New Building" activity is slow, there are always hundreds of floors in older homes to be resurfaced and finished. With the many outstanding time and money saving features, American machines for years have been the favorites of floor surfacing men. Investigate the wonderful possibilities of this work to-day.

2. POLISHING and WAXING

Many contractors find a considerable need for polishing, waxing, steel-wooling and disc-sanding equipment. Here it is—all in one—in the new American De Luxe line. In addition—many men are doing nothing but polishing, waxing and finishing floors and making big profits at it too. There is a big field for men owning these machines. Decide to be your own boss and investigate to-day.

3. CABINET and MILLWORK



Here is a machine—the American Sanderplane that will quickly pay for itself in your work. Many lumber companies, millworks and cabinet shops have testified as to the American Sanderplane's money-saving and profit-making applications. Besides wood, it can be used on metal, marble and stone with equal success.

SEND COUPON NOW

If you are at all interested in getting into something for yourself and getting out of the "old rut" or if you want to increase your profits in your present business, sign and send in the coupon below. There is no cost or obligation to you. Be sure to check the kind of machine you are most interested in on the coupon below.

THE AMERICAN FLOOR SURFACING MACHINE COMPANY
511 So. St. Clair Street • Toledo, Ohio

Gentlemen:

Without cost or obligation send complete prices on the following:

- ☐ American Floor Surfacing Machines.
- ☐ American Polishing and Waxing Machines.
- ☐ American Belt Sanders.
- ☐ I want to get into something for myself.
- ☐ I already own one—quote trade-in value.

Name.....

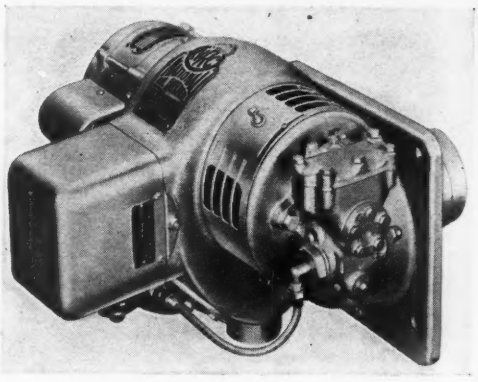
Street.....

City.....State.....

Oil Burner with New Mixing Device

A NEW oil burner has been announced by the National Radiator Corporation, Johnstown, Pa. The burner is a development of National's Research Laboratory, and the ingenious device to mix air with the fuel oil spray is known as the Turbo-Blast Head; it permits the burning gases to be completely consumed before leaving the cylindrical combustion tunnel, which is furnished as standard equipment with National's line of oil heating units. Complete combustion within the tunnel produces exceptionally high tunnel temperatures which allow oil to be burned more efficiently and produces a cleaner, more intense flame. These flame characteristics permit the boiler heating surface to remain practically free of soot and deposits, with the result that there is a more complete transfer of heat to the boiler sections, as indicated by the unusually low stack temperatures experienced with the National oil heating units. The Turbo-Blast Head eliminates the need for excessive air velocity and the hot gases are allowed to pass more slowly over the boiler heating surface.

The burner is of the gun type, and is rated to burn from one to three gallons of oil per hour. Its component parts, including the blower wheel, fuel pump and multiple filter unit, are of sufficient size to deliver several times the volume of air and fuel required by the burner when operating at maximum rating.



GUN type oil burner with newly developed Turbo-Blast Head for efficient mixing.

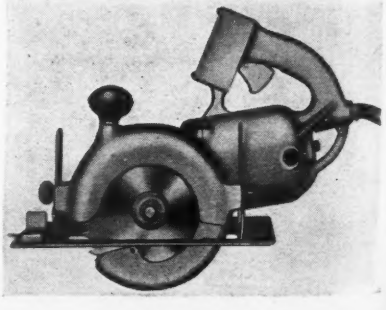
Penetrating Floor Finish for Wood or Cement

THE American Floor Surfacing Machine Co., Toledo, Ohio, has announced American Pentra-Seal. This comparatively new and different floor finish is a penetrating seal which seals and impregnates the floor against grit and harmful traffic dirt. It definitely resists ink, water, acids, ammonia, as well as scuffs and marks from feet and furniture.

American Pentra-Seal is ideally suited for finishing maple as well as oak floors. It has the approval of the Maple Flooring Manufacturers Association, the Oak Flooring Manufacturers Association and the Masonite Corporation, as a floor seal and finish, having been thoroughly tested in their respective laboratories.

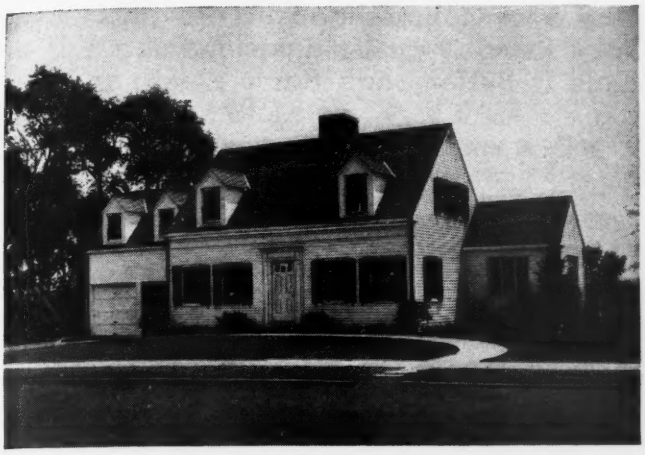
Heavy Duty 2-Inch Electric Saw

A NEW model portable electric saw of 2-inch cutting capacity has been added to their line of tools by the Syntron Company, Homer City, Pa. In design its incorporates such features as tilting base for bevel cuts; oversize, excess powered universal motor; double pole; underwriters approved trigger switch; silent worm gear drive; and an automatic telescoping safety guard that has the official approval of the most rigid state safety commissions. Its light 18 lb. weight and nicely balanced handle position make it an easy tool for one-hand use.



HIGH TORQUE electric handsaw can also use abrasive discs to slot brick and tile.

America's first model **ALL-GAS** *home*



...insulated and finished with HOMASOTE

In the attractive Highledge section of Hartford, Connecticut, America's first model All-Gas home is now on display. Inside and out, it is a home of beauty and comfort.

Beneath the paper and paint of the interiors, Homasote has been used—for two major reasons.

Homasote contributes to the beauty of interior finish, by providing the perfect, smooth base for paper or paint. No waiting for plaster to dry—no cracks. And because Homasote is made in Big Sheets—up to 8'x14'—there are no unsightly wall joints or batten strips.

The very material used for interior finish, simultaneously provides the highest insulating efficiency and guarantees fuel economy. And because Homasote is permanently resistant to water, its insulating efficiency is never impaired by moisture absorption.

On the exterior, Thermasote Sheathing was used—increasing the structural strength, doubling the insulating value.

The beauty and comfort of the Highledge All-Gas home will endure. The many advantages of Homasote and Thermasote are described in new booklets we'd like to send you.

Write today for these—and for our Simplified Method of Estimating. (Greater accuracy in far less time.)

Weatherproof
HOMASOTE
Insulating and Building Board

HOMASOTE COMPANY, TRENTON, NEW JERSEY
Send FREE literature on
☐ Homasote Big Sheets ☐ Thermasote Sheathing
☐ Precision-Built Homes ☐ Simplified Method of Estimating

*Name*_____

*Address*_____ 36

MR. and Mrs. Prospect look over one of your jobs. They like it. The sale "looks good" . . . and then the Missus, who has been reading up and looking about . . . hesitates over those *walls.*

She's fussy. She wants "the last word" in construction . . . she wants *permanent, beautiful* and *easily cleaned walls* in the '38 style.

That's where colorful, successful Tile-Tex, the new decorative wall material, welcomes her inspection and *helps your sale.* She readily admits the modernity of Tile-Tex . . . instantly admires the exquisite colorings . . . visualizes how easily they can be kept clean.

For *new* job . . . or modernized . . . Tile-Tex Walls—and Floors—offer low cost and high efficiency . . . and our nearest Distributor has a real fact story for you. Write for his name and a copy of the new folder, "Decorative Walls By Tile-Tex."

TILE-TEX Company CHICAGO HEIGHTS ILLINOIS

OR YOU MIGHT CARE TO REPRESENT US IN YOUR TERRITORY

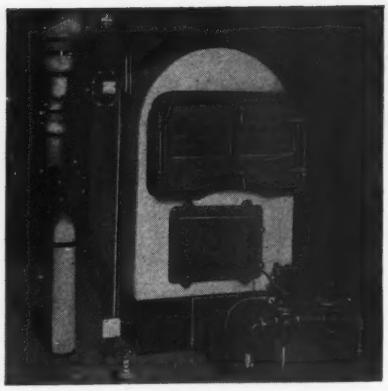
The Tile-Tex Company
Chicago Heights, Illinois

If my territory is open, I would like to have complete information on the Tile-Tex Dealer's proposition.

Name _____

Address _____

Hank



Sez:

Make No Mistake About Our Folks Making A Steel Boiler

FOLKS is funny. Not born that way. Just get that way. Do it by sort o' standing in their own way.

Now take boilers. Lots of your builder fellers has used our folks make of cast iron boilers. And you been satisfied.

Then along cums a job what wants a steel boiler and you just plumb forget we make 'em.

Gord man, how do you get that way?
Why shucks, we make 'em big and little.
So little they ain't got long pants on yet.
So big you can cum close to a heating all outdoors with just one.

This here one, is doing a right smart job of contented heatin' for E. H. Foster & Co. at Cohoes, N. Y. It's gas fired.

Ain't going ter tell you how fuel savin' it is.
You wouldn't believe me anyway.
But that don't bother me none. Am used to it. But when our folks, "The Burnhams," say a thing is so, it ain't nuthin' else. So better had you see 'em, or write 'em, and stop maybe a standing in your own way.

Hank Hindle

BURNHAM BOILER CORPORATION
Manufacturers of Heating Equipment Since 1873.
IRVINGTON, NEW YORK ZANESVILLE, OHIO
Export Department, 50 Church Street, New York

Burnham Boiler

News of the Month

Building Activities and Meetings

May Best Construction Month Since Last July; Residential Volume for First Half of June Is Better Than Same Period in May

DURING the month of May total construction contracts awarded in the 37 eastern states reached the largest dollar total since July of last year, according to F. W. Dodge Corporation. The May, 1938, total figure was $283,156,000, which was an increase of 28 per cent over the preceding month, and an increase of 16 per cent over May, 1937. While the increase was largely in the heavy engineering classifications, residential building also showed a decided increase over the preceding month and compared more favorably with the corresponding month of 1937, than has any preceding month this year. Privately financed work of all kinds was only 8 per cent less in dollar volume than in May of last year, while publicly financed work increased 55 per cent.

Residential building contracts, with a total of $83,153,000, were only 1 per cent behind May of last year, and represented the largest dollar volume recorded since June of last year. Eight out of a total of fifteen districts showed increased residential building, as compared with May of last year. The May figure also increased 11 per cent over the preceding month. It did not include any large public housing projects under the United States Housing Authority program. The accumulated total of residential building contracts for the first five months of this year was $313,356,000; while this was 26 per cent under the first five months of 1937 (the peak period of the last recovery cycle), it remained 20 per cent ahead of the first five months of 1936.

Non-residential building in May reached a total of $77,771,000, representing a decline of 3 per cent from April. Public works and utilities projects amounted to $122,232,000 last month.

Figures for the first half of June are as follows:

37 Eastern States	June 1-15, '38	June 1-15, '37	June 1937
Residential	$41,343,000	$49,708,000	$ 92,978,000
Non-Residential	37,323,000	55,830,000	125,903,000
Public Works	36,641,000	32,334,000	70,173,000
Utilities	5,263,000	10,520,000	28,688,000
Totals	$120,570,000	$148,392,000	$317,742,000

FHA Now Insuring Farm Improvement Mortgages

THE Federal Housing Administration is now insuring mortgages on farm properties, Stewart McDonald, Administrator, has announced.

Amendments to the National Housing Act passed in February permit the Administrator to insure mortgage loans made on farms on which *farm houses or other farm buildings are to be constructed or repaired,* provided at least 15 percent of the loan proceeds is expended for materials and labor on buildings. Rules and regulations covering these loans have now been prepared by the FHA. Previously, FHA insurance has been granted only on non-farm real-estate loans.

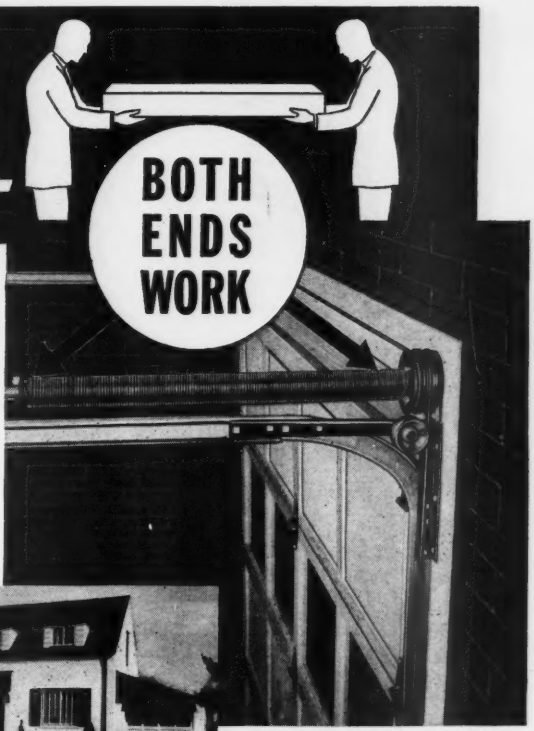
Farmers who operate their own farms, individuals who rent their farms to others, and farm tenants and others who contemplate the purchase of farms are all eligible to borrow from approved institutions under the terms of Title II of the Act. Institutions approved by the FHA as mortgagees, which may apply for insurance on farm loans, include banks, building and loan associations, life insurance companies, mortgage companies, and other lending agencies.

Individuals may obtain FHA-insured mortgage loans *to repair existing farm houses or farm buildings or to construct new houses or buildings.* In addition, they may borrow to refinance existing mortgages upon their property, so long as at least 15 percent of the loan proceeds is applied to materials and labor in construction or repair work.

These insured mortgage loans are distinct from modernization and repair loans provided for in Title I of the National Housing

(Continued to page 78)

No "Lazy-Lift" on EITHER side -



of this New Model "J" Rō-WAY Door

You have never before seen any garage door operated like this. An entirely new and patented construction is used. Working parts are reduced by almost half. The vertical tracks are attached directly to the door jambs. Adjustments are rarely needed and quickly and conveniently made. In ease and smoothness of operation, you have never seen its equal. Actually, it *"coasts."* All these advantages are made possible by the . . .

Rō-Tō *Live* Spring (Patented)

One powerful coil spring is used. It is of floating type with one end attached to the shaft, which drives one sheave. The other end of this floating spring is attached to the second sheave. As the door is closed, the pulleys travel in opposite directions, winding the two ends of the Ro-To Live Spring in opposite directions, and giving double storage of lifting power. When the door is opened, the Ro-To Live Spring pays out exactly the same amount of power from both ends at exactly the same time. Both ends of the spring work. By applying this equal lifting power to both cables, we have a door that always hangs in perfect balance without turnbuckle adjustments, and obtain an absolutely vertical lift without possibility of side-drift or binding.

So much SIMPLER to install

This new Ro-Way Model "J" Door is very easily and quickly installed, because of fewer parts, attaching of vertical tracks directly to door jambs and small requirements for side and headroom.

You will find it the ideal, trouble-free, popular priced residence garage door for your trade.

Write for Prices and Illustrated Folder

ROWE MANUFACTURING CO.,

768 Holton St. Galesburg, Ill., U.S.A.

Attached Residence Garage with Ro-Way Model "J" Door.

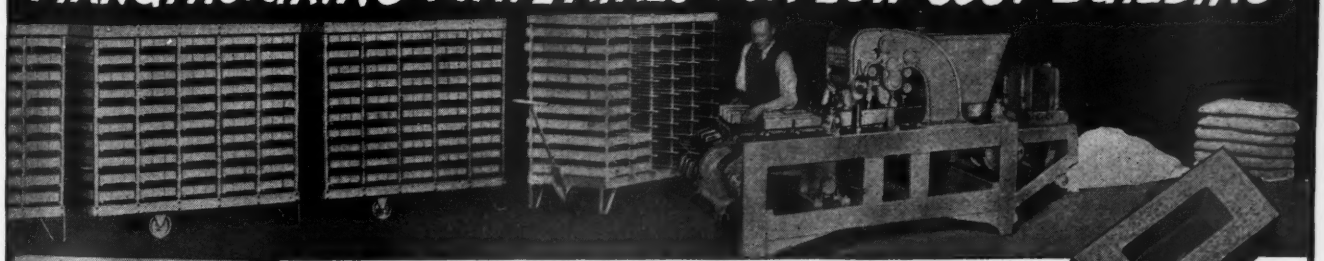
Other Advantages of Rō-WAY Model "J" Door

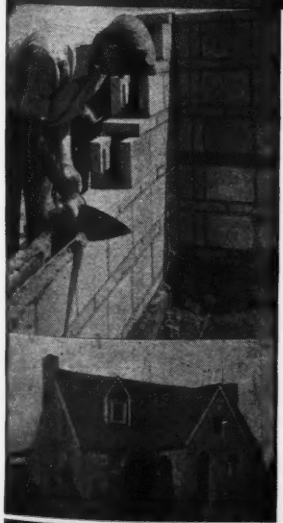
Tracks attach directly to jamb . . . no off-set track brackets . . . lower headroom requirement . . . only 3⅝" sideroom requirement . . . impossible to jump track, etc.

Other models of Ro-Way Doors are available for all sizes . . . all buildings . . . electrically operated if desired.

BIG OPPORTUNITIES

MANUFACTURING MATERIALS FOR LOW COST BUILDING





OPPORTUNITY COMPLETE, READY-MADE FOR YOU IN YOUR LOCALITY—One that is proven—ready for you to cash in on the great building up-turn under way. It includes the essentials upon which sound and successful business enterprises are established.

SUPERIOR PRODUCT, LOW COST PRODUCTION—You will produce a material nearly 20% lighter in weight—A product capable of meeting all known building requirements—One accepted by Government and City Building Departments—Requiring 20% less material—Made by line production machines.

EARNING POWER AND FUTURE—Present DUNBRICK-DUNSTONE Manufacturers already point the way for you. Some are selling output at 100% over cost. Others are getting as high as 80% of the business—others are rapidly expanding from earnings.

WE EQUIP YOU WITH LINE PRODUCTION MACHINERY—Large production—only one or two men. Equipment costs but fraction of other processes of equal capacity. Franchise granted covering your locality--protecting your market, business and future.

INVESTIGATE NOW—Send for "4 Keys to Success." It tells the complete story—How present manufacturers are making outstanding progress in this new industry—One that offers unlimited opportunity for growth, expansion and profit. Write today.

Better Material at Lower Cost

Countless numbers of new homes, apartments and structures for business and industrial purposes are needed today. Government, industry, business, financial institutions and municipalities—all are combining to speed up this needed construction. They actually are paving the way and assuring a market for the man equipped to supply the enormous demand in his territory for building materials.

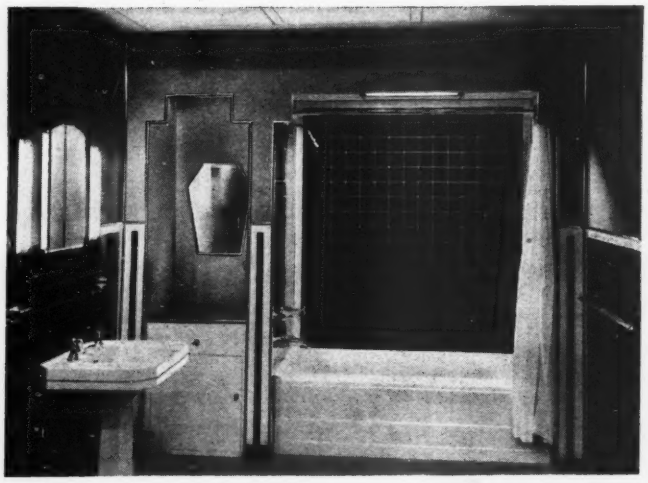
Your product will be permanent, fire and termite proof—in a full range of beautiful colors, shades and textures. Improved design cuts construction costs to the level of frame—and with factory-to-job delivery, offers new standard of service to building trade in your community.

W. E. DUNN MFG. CO. 450 W. 24TH ST., HOLLAND, MICHIGAN

"IT'S A SWELL PLAN. BUT CAN WE AFFORD IT?"

After the new-building or remodeling budget is set up and you and your clients start to play "put and take" with each item, you'll be glad that Genuine MASONITE Products have been specified.

These modern building materials give *the effects your clients want.* They give the *permanency that adds to the sale and resale value of the house.* And they *fit inside the most conservative budgets.*



• This bathroom, for example. The gleaming tile-like wainscoting and shower walls are MASONITE PRESDWOOD TEMPRTILE, black with white lines and canary-yellow trim. The luxurious dressing nook is easy to build with MASONITE TEMPERED PRESDWOOD. The upper walls are also made of this grainless, moisture-resisting board. Snap-on beading is rustless steel with chrome finish. And the ceiling, with grooved pattern, is MASONITE CANEC INSULATION.

If you've not yet had an opportunity to discover the outstanding satisfaction of Genuine MASONITE, mail the coupon below for full and complete details on its uses and economies. And remind your customers that F. H. A. loans are easy to secure for new building and remodeling. Lumber dealers have complete information.

Copyright 1938, Masonite Corporation

FREE SAMPLES

It's Right MASONITE

MASONITE

THE WONDER WOOD OF A THOUSAND USES

A MISSISSIPPI PRODUCT

Sold by Lumber Dealers Everywhere

MASONITE CORPORATION
Dept. AB-7
111 West Washington Street
Chicago, Ill.

Please send me FREE samples and complete details about MASONITE PRESDWOOD TEMPRTILE and MASONITE TEMPERED PRESDWOOD.

Name_____

Address_____

City_____ **State**_____

News

(Continued from page 76)

Act. Loans of the latter type are exclusively for financing improvements upon property already owned, including the construction of new buildings where the loans do not exceed $2,500 each. Title I loans for improvement may amount to $10,000, but Title I loans may not exceed five years for improvement or seven years for the construction of new residences.

FHA-insured mortgage loans are long-term amortized credit advances. They are made by private institutions which the Federal Housing Administration insures against loss through payment to them, in case of default, in the form of Government-guaranteed obligations. The FHA does not lend any money or build any houses.

Mortgages insured by the FHA may amount to as much as $16,000. The interest rate may not exceed five percent. In addition, a mortgage insurance premium is charged which amounts to one-quarter of one percent on loans of $5,400 or less and to one-half of one percent on loans above $5,400.

FHA-insured mortgages may run as long as 25 years in the case of some mortgages of $5,400 or less, with a 20-year maximum in all other instances.

The maximum amount which may be borrowed in relation to the appraised value of farm property is 90 percent for loans of $5,400 or less, between 80 percent and 90 percent for loans from $5,400 to $8,600, and 80 percent for loans exceeding $8,600. The exact proportion of valuation which may be borrowed depends upon the rating of the mortgage risk.

FHA-insured mortgage loans are repaid by the borrower in regular equal installments, either monthly, semi-annually, or annually, in accordance with the income of the borrower. Installments include principal and interest payments, hazard, fire, and mortgage insurance premiums, drainage and irrigation charges, ground rents, taxes, and special assessments. They do not include initial charges by lending institution for title search, appraisal, and mortgage recording fees.

The application fee paid to the FHA amounts to $3 per $1,000 to cover the cost of appraisal. In addition, the lending institution may collect an initial service charge to reimburse itself for the cost of closing the transaction. This charge may not exceed one percent of the amount of the mortgage or $20, whichever is greater, except in the case of construction loans where the charge may be one and one-half percent, or $30.

The FHA makes careful appraisals of the property upon which insured mortgage loans are made, and takes into consideration all factors affecting its value and usefulness. Its property requirements and construction standards also offer safeguards to borrowers since they assure well-constructed homes and buildings. In addition to convenient repayments in regular installments, the FHA plan eliminates second mortgages and periodical expensive refinancing costs.

Down payments by borrowers, which must amount to at least ten percent of the total property valuation, and in some cases to twenty percent, do not necessarily have to consist of cash. Land already owned by the loan applicant may constitute all or part of the down payment.

While 15 percent of the loan proceeds must be used for materials and labor in the repair or construction of buildings upon the farm property, contractors doing the construction work may employ the services of the borrower at customary wages or may purchase materials owned by the borrower at reasonable prices.

The term "farm" as applied to FHA-insured mortgages is interpreted by the administrative rules to mean real estate which in the judgment of the Administrator is capable of producing an annual gross income of $350 in kind, cash, or rent from agricultural uses, or derives 25 percent or more of its rental value from agricultural uses, or derives 25 percent or more of its capital value from its agricultural capacity.

Starts Window Conditioning Campaign

A BROAD merchandising program to focus attention upon the most important single form of insulation—window conditioning by means of double glass—is being launched immediately by the Libbey-Owens-Ford Glass Company. Designed primarily to educate the public to the many advantages of window conditioning, the campaign will be conducted in such a way as to be of direct benefit to the building industry.

In a hurry for Steel Sash?

then ORDER FROM THIS LARGE PERPETUAL MESKER STOCK!

Mesker STEEL SASH STOCK LIST
JUNE 1938

	UNITS IN STOCK
PIVOTED SASH	5,636
PROJECTED SASH	1,979
LIGHT CASEMENTS	1,652
BASEMENT SASH	574
SECURITY SASH	186
	10,027

The Modern Mesker Warehouse

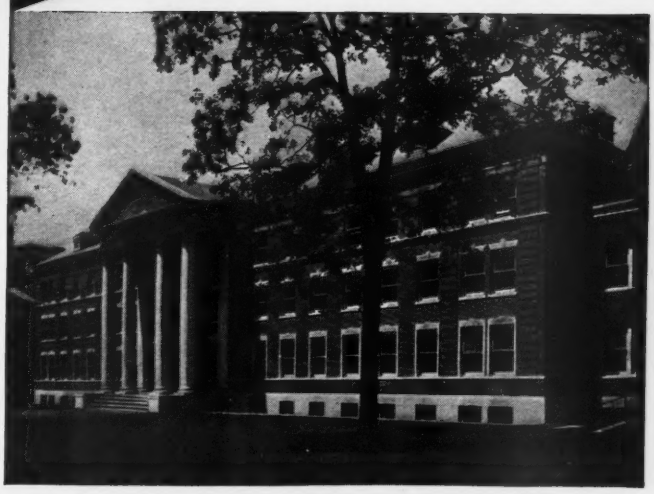
Only Mesker offers you such a large, complete centralized stock of steel sash, available for immediate delivery at all times.

Write Mesker today and have your name placed on the mailing list to receive a monthly stock list regularly. It will keep you constantly informed on the Mesker steel sash stock available.

Also send for the new 1938-1939 Mesker Dealer Handbook . . . it gives all the information necessary to figure any steel sash job and tells at a glance just how much each type of sash will cost you.

Mesker
SINCE 1879
MESKER BROS., 424 S. SEVENTH ST., ST. LOUIS, MO.

For Window Glass



ALTON STATE HOSPITAL, *Alton, Ill.*
Architect:
Dept. of Public Works, State of Illinois

SPECIFY

Clearlite
SHEET GLASS
A QUALITY

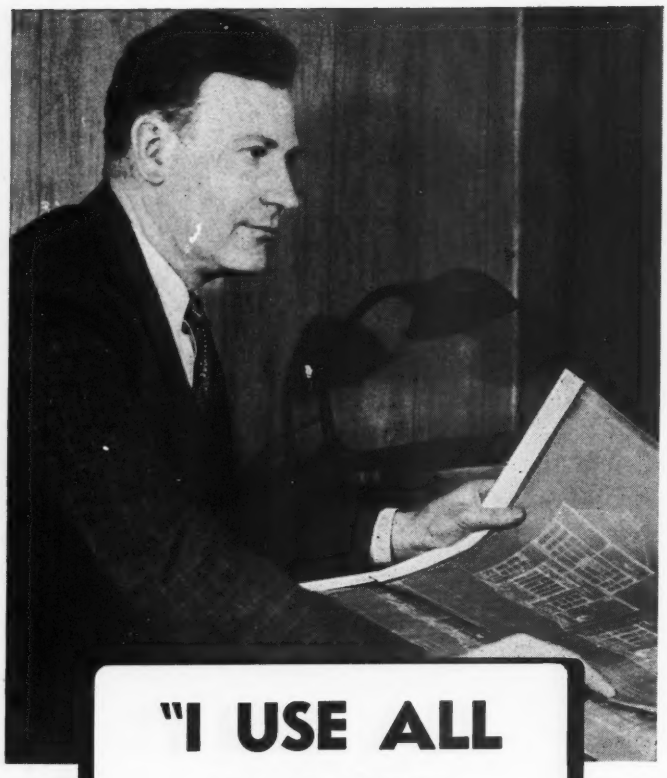
EASY ON THE EYES

BUY WINDOW GLASS MADE IN U. S. A.

For this hospital as for hundreds of other public buildings, Clearlite Quality Glass is specified because of unusual clearness, uniform thickness, brilliant lustre and fine quality.

For any purpose, specify Clearlite and feel secure in complete satisfaction for the owner.

FOURCO GLASS CO.
CLARKSBURG, W. VA.
Branch Sales Offices: NEW YORK • CHICAGO • FT. SMITH, ARK.



"I USE ALL THREE"*

SAYS CHICAGO BUILDER

WESTERN PINES are regular items in the specifications in the office of Carl B. Anderson, Chicago contractor-builder.

As do builders all over the country, Mr. Anderson finds the Western Pines "excellent for sash, exterior doors, interior and exterior trim, columns, shutters, screens . . ."
He writes, "I use all three.* The ease with which they can be worked, their exceptional painting qualities, their long life certainly make them economical building materials. Too, their finished appearance never fails to please my customers."

THE WESTERN PINES WILL DO YOUR NEXT JOB BETTER
***TRY THEM

Specify Western Pines (WPA) From Association Mills

Western Pine Association, Yeon Building, Portland, Oregon

• Ponderosa Pine • Sugar Pine
• Idaho White Pine

*These are the Western Pines

LETTERS from Readers on All Subjects

Facts, opinions and advice welcomed here

Quick to Put Ads to Work

Neenah, Wis.

To the Editor:

We have your letter of June 16 in reference to the advertising campaign as outlined on pages 40 to 43 of your June issue and sponsored jointly by *American Builder* and The Producers' Council.

We immediately got busy and inside of two hours we had lined up seven other concerns who are joining us in running these ads here in Neenah. We were able to interest three loaning institutions, a plumbing and heating concern, a painter and several of our local contractors whom we are including gratis so that we have a complete list of people affiliated with home construction work. We are underwriting one-half of the expense and are asking the people who are co-operating with us to stand the other half.

We have already sent in a letter to The Producers' Council at New York asking for the mats, and we intend to run our first ad on June 30th and follow through with the seven mats on each Thursday night for seven weeks, with a coverage of six thousand families each night.

We are very enthusiastic about this advertising and feel that it will result in some very fine leads for us. We think that The Producers' Council and your magazine have done a wonderful job for the dealer. We will mail you tear sheets of our ads each time they are run so that you may have them for your files.

THE LIEBER LUMBER & MILLWORK CO.,
By Otto Lieber, Jr., President.

Volunteers for Industry Drive

Decatur, Ill.

To the Editor:

After reading your article on the high cost of building in this month's issue of *The American Builder,* I most heartily agree with you that the advertising such as you have displayed samples of would help to produce business. Since most of the advertising locally has been carried on by individuals and of poor copy, it did not get across to the prospective homeowner the true facts of the comparative cost of the 1926 home and the home of today.

As local banks and loan associations, for selfish reasons on account of numerous repossessed properties during the depression, are continually spreading propaganda about the high cost of new building, and as the potential homeowner hears nothing from those in building industry, he believes this propaganda fully.

As you state in your article this is too large a program to be carried on singly, but on a cooperative basis, where the cost would not be prohibitive for all the sponsors, it would be a success.

I am willing to spend some time to see if such a campaign could be organized, and as I notice in your article you have a portfolio showing copies of the 7 advertisements and suggestions for local procedure, I would greatly appreciate your mailing this portfolio and suggestions to me to assist me in organizing this campaign. I am most certainly sold on the idea, and I believe I could get enough others to put it across.

I thank you in advance for the above favors.

HARRY H. WATSON,
General Contractor & Builder.

Offers a Way Out

New Haven, Conn.

To the Editor:

We have been one of your advertisers off and on for quite some time, and it is just a little discouraging in looking through your magazine month after month to note the persistence on the part of home designers to build "Dead End" cellars.

(Continued to page 82)

Blends with every type of construction

The "OVERHEAD DOOR"

THE DOOR WITH THE

MIRACLE WEDGE

—ADAPTABLE—

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FACTORIES
WAREHOUSES
SIMILAR BUILDINGS
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U.S. Patent Nos. 1743454 1838402 (Listed in Sweet's Catalog)

THE ONE BIG IMPROVEMENT IN WINDOW CONSTRUCTION

Pre-Fabricated—Weatherstripped
—No Weight Pockets—

In line with the greater values offered in homes today at no higher cost, the Non-Stick Window is an outstanding contribution. It is a quality window, **adaptable to all priced homes.**

The First Completely Assembled Double-Hung Wood Window; Sold as a Unit Since 1929.

The Non-Stick Window is provided with a 2 x 4 FRAME, the jamb being built in as a cripple stud. No air space behind jamb. ONE-PIECE ZINC SASH GUIDES cover the face of the jamb, forming tongue-and-groove weatherstripping and channels for the sash, overcoming air infiltration. No paint stick, no binding. Equipped with rust-proof spring balances, guaranteed for the life of the building. The Non-Stick Window, furnished as a COMPLETE UNIT, eliminates contractors' gambling on the cost of the completed window. Once installed, it requires no further attention.

Be sure to Include Non-Stick Windows in Your Specifications Before Obtaining F.H.A. Approval.

See the Non-Stick Window at Your Dealer or Write Us

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Gentlemen: Please Send Free Literature. AB-78

Name .....
Street Address.....
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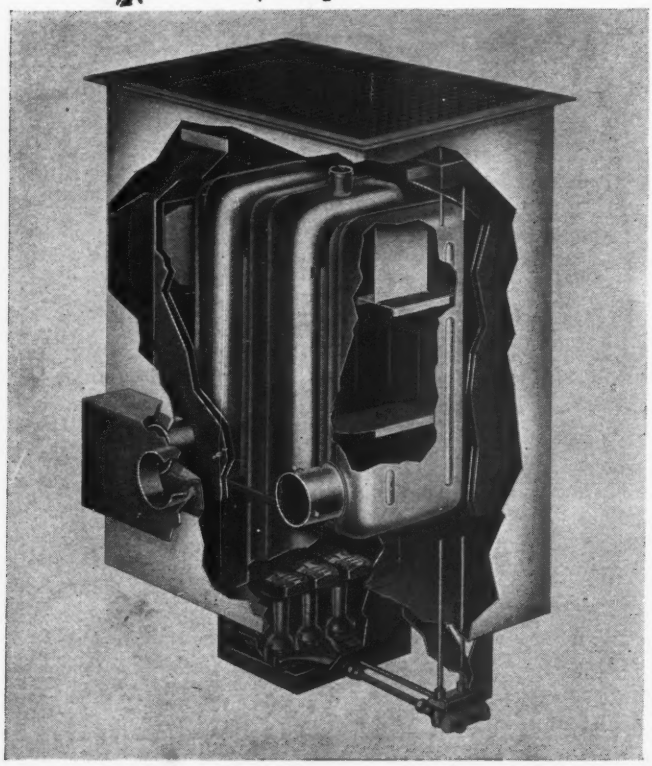
take a good look



at the MOST EFFICIENT Floor Furnace Ever Built!

By all standards of efficiency and economy the 1938 Payne Gas Floor Furnace heads the field! It is rapidly becoming the most popular unit of its type.

The Payne Floor Furnace is economical to buy. Easily and quickly installed. Requires no basement.

Made in America's most modern furnace plant —by manufacturers who have devoted 25 years to the production of gas-fired appliances *exclusively*.

Write for full information.

Payne FURNACE AND SUPPLY CO., INC.
Beverly Hills • California

Letters Dept.

(Continued from page 80)

Can you tell us why it is that so much care and attention are given to exits in connection with theaters, public buildings, etc., and on the other hand apparently no thought in this direction pertaining to home cellars? This, in spite of the fact that people congregate there more and more, due to the tendency to provide basement recreation rooms, workrooms, laundries, etc.

It seems to us, now, as it always has, that every home cellar, in order to be really safe and really convenient, should have at least two means of egress, one of them direct to the yard. This latter exit, of course, can be provided without using our product (the Bilco all-metal cellar bulkhead). Nevertheless, we cannot understand why it is not provided.

Will you be good enough to give us your opinion on this subject?

BILCO MANUFACTURING COMPANY,
By G. W. Lyons, Pres. & Treas.

Cost Changes in Chicago Building

(Continued from page 65)

and taxation 42 per cent and 44 per cent.

To draw a conclusion on the foregoing situation and review the fact, that while material prices are down in a fairly substantial amount below the period of 1926, it must be realized that even at this low level material dealers and distributors have assumed the extra burdens of taxation and wage increases both in processing and distribution. The hope that material prices will remain at a low level for any period of time is contingent solely upon a small volume of business in the construction market. The sole reason that material prices are low is that prices are set by competition, and material distributors have been unable to protect themselves from both lack of volume and encroachment of taxation into the building dollar.

On the question of taxation, only one conclusion can be drawn and that is that as long as our present laws remain in effect, increased taxes are inevitable. A proof of this increase of taxation will be found in the automatic increase, which is to come under the social security plan of operation.

The man who contemplates home purchase or home construction will actually be taking advantage of present market conditions by buying or building now, rather than attempt to wait for an imaginary reduction in cost that might come to the building industry in the near future. Any rapid expansion in the construction volume will be followed by the inevitable rapid price increase, which was amply demonstrated in 1920, 1929 and 1937.

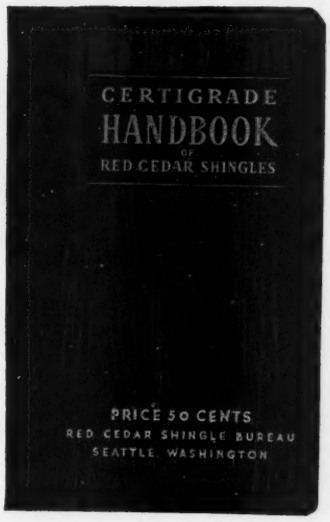
Molds for Hollow Walls

(Continued from page 63)

The collapsing and expanding mechanism which permits the mold to be set, loosened and slid along the wall perimeter is very simple in construction and operation. The experiments were conducted with the mold as illustrated which has plywood side and core plates. Since the plywood would have to be replaced at fairly frequent intervals depending upon amount of use, details were also prepared showing sheet metal plates.

Being of all welded construction, the mold is substantial and should withstand considerable hard usage. It is somewhat lighter than the Van Guilder mold and heavier than the Universal mold. Ordinarily, the two-foot and five-foot molds, together with corner equipment, would be sufficient for constructing simply designed buildings and houses. However, details have been prepared showing the accessory equipment required for constructing pilasters and narrow piers such as between closely spaced windows.

THIS BOOK FREE



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A builder's handbook illustrated with working drawings detailing the application of Certigrade Cedar Shingles. Includes grades and their uses; application—pitch, covering capacity, sheathing, valleys, flashings, nails; types of roofs; double coursing on walls; over-roofing; staining and painting; master specifications. Write Red Cedar Shingle Bureau, Seattle, Wash., U. S. A., or Vancouver, B. C., Canada, for your copy, free.

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Trim edges accurately in half the time.

Eliminate saw and chisel work—save time.

Cut Costs and Build Profits with a Speedmatic Saw

HIGH building costs don't care who you are—They eat into your profits at every chance they get. Here is a way, however, to mow them down by using a Speedmatic Saw with guaranteed cutting speed on every job you do on wood, tile, composition, slate, marble and light metal. Built in four powerful sizes. Finger tip adjustment for depth and bevel cutting. If you don't believe it we dare you to write for this free booklet which shows how hundreds of builders are putting high cutting costs down for the count.

free **Write today for your free copy of "Manual on the Use of Electric Hand Saws in House-Building." It shows actual facts and figures on how others are doing it.**

The PORTER-CABLE MACH. CO.
1721-7 N. SALINA ST. SYRACUSE, N.Y.

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1818 *The Name Guarantees* 1938

Miami Housing Project

Hopes offer dealers a profit-making franchise for distributing Steel Casement Windows based on these proven features of dependability—dependability in construction—dependability in design—dependability in engineering service—dependability in meeting delivery schedules—and dependability in pricing to meet the difficult demands of the present market. Your correspondence is invited.

HOPE'S WINDOWS, Inc.
Jamestown, N. Y.

We would appreciate copy of literature descriptive of HOPE'S WINDOWS and Dealer Proposition.

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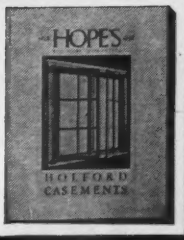

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Jamestown, N. Y.

NO MORE WAITING FOR WEATHERING

Painters tread right on the heels of the sheet-metal men, when downspouts, gutters and other exposed sheet-metal work are made of Armco Galvanized PAINTGRIP. This is especially important if there's a penalty date in the contract.

Now no half-finished job to annoy your client while you wait for weathering to make the metal paintable. And no need to resort to acid washes that destroy part of the galvanized protection.

Paint goes on Armco Galvanized PAINTGRIP smoothly and holds tenaciously. Zinc compounds rob paint of its elasticity; but Armco PAINTGRIP has a neutral surface film that actually prevents the zinc from coming in contact with the paint, thus keeping it flexible, beautiful and protective.

There's an Armco distributor or sheet-metal contractor near you, who will be glad to serve you. Or, write to us for complete information. The American Rolling Mill Company; Executive Offices, 2241 Curtis Street, Middletown, Ohio.

ARMCO

ARMCO PAINTGRIP SHEETS

"Home Value" Drive Sweeps Ahead

(Continued from page 30)

velopers, building supply dealers—endorsing the idea and offering to take the lead in putting the campaign into effect in their communities, and on top of this some of the leading distributors of building materials and equipment took up the idea, with the net result that it is now taking root in hundreds of cities and towns which are yet to be heard from directly.

Another sign that the building industry may be growing up is the mature and constructive way in which this campaign is being handled. Instead of getting into a dog-fight with the "experts" over building material costs, labor costs and other conditions, such as the undesirability of home buying in certain individual cases, the building industry is devoting its efforts to the presentation of the facts of value.

There is no confusion in the issue. The building industry is able to produce and is producing "25% to 40% More House for Your Money Today" than ever before, and included in today's price are many extras of convenience, comfort, health and over-all economy which were not available in yesterday's house.

The results of this campaign so far have demonstrated that there are many business organizations which recognize their stake in the growth of the industry and are contributing their share. Chambers of commerce all over the land, under the leadership of the Chamber of Commerce of the U. S. are taking an interest in this campaign.

All Local Factors Assuming Their Share

Among the underwriters of local campaigns which have already been sold are state and national banks and building and loan associations which participate, not only because they have money to lend on sound construction projects, but because they recognize the importance of the recovery of the building industry in the general business in the community.

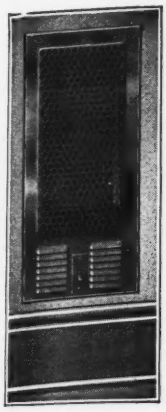
Of course, building contractors, subcontractors, building supply dealers and lumber yards are assuming their share, but along with them we find the gas companies, the electric light companies and local manufacturers all stepping up to do their part.

In several cities, a single company has practically guaranteed the campaign but this guarantee has not been necessary since the other factors have rallied around it when its purpose and scope were made known.

In city after city the newspaper has been the rallying point and there are several cases in which the newspaper has been able to secure the underwriting of this campaign in one or two days.

Of course, the city of Washington, D.C., where a similar campaign was run early in the spring, is not typical necessarily. But this campaign, started in Washington in February, saw a 34 percent increase in new house sales in April over March and a 29 percent increase in new house sales in April '38 over April '37—so even in Washington where business never has been bad, the story of "More House for Your Money" evidently had a stimulating effect on more house sales.

This actual experience plus the uniform endorsement of this idea from builders, contractors, realtors, building supply dealers, financial institutions, public utilities and manufacturers should encourage every community in which this campaign has not started to get it under way at once.



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Quick, Clean, Safe

ECONOMICAL

To add comfort and promote health by eliminating that chilly feeling in bathrooms, children's bedrooms, dressing rooms, etc. — on days when it doesn't pay to have the regular heating plant in operation — install the FA Quikheter, flush type. It furnishes quick, safe, clean, economical heat by taking *cool air from the floor* and moving it up through and out of the heating chamber with a *velocity* necessary to circulate the warmed air *throughout* the room.

Furnished in small sizes of 1000, 1250, and 1500 watts, and large sizes of 1500, 2000, and 3000 watts capacity.

Frank Adam

ELECTRIC COMPANY

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1938

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BOOK GUIDE

This 64-page catalog lists and appraises all of the latest and best books and booklets on all phases of home building. With the aid of its complete index you can locate just the book you need. More than 500 building books of all publishers, with date of publication, price and complete descriptions of contents, are listed.

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American Builder and Building Age

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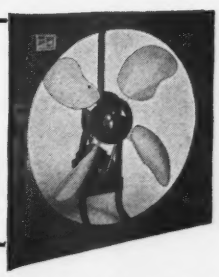
6¢ A NIGHT

The biggest sales maker since FHA

ARCO COOLING FAN



Here's what home seekers have looked for and expected through trick phrases and fancy names—*Low Cost Cooling In Summer.* **And here it is, presented by the new Arco Cooling Fan, used in conjunction with an American Radiator Heating or Air Conditioning System.**

Sucking cool air in, blowing hot air out in a few hours of operation after sundown, Arco Cooling Fan creates comfort for most of the following day—that prospects can feel when they walk into the house.

Arco Cooling Fan comes complete—ready to set up. The "package" includes the "Auto-Timer"—to stop or start the fan at any pre-determined hour.

Give your houses something different—something the public wants. Summer cooling for 6c a night with the Arco Cooling Fan. Ask your Heating and Plumbing Wholesaler or write—

AMERICAN RADIATOR COMPANY

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

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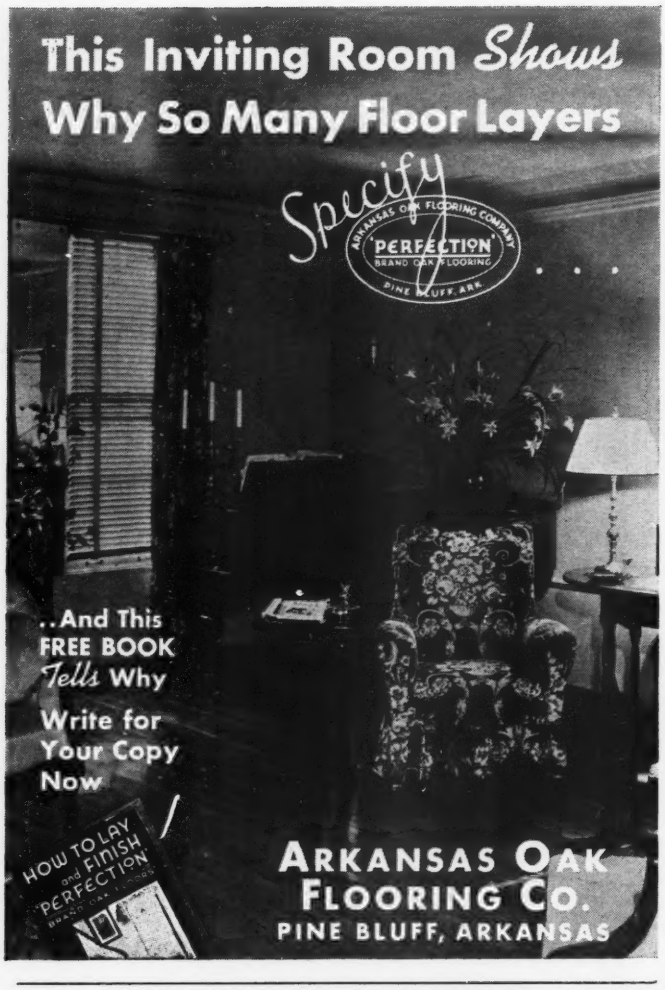

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MODERN 3½-S MASCOT
LESS WEIGHT — END DISCHARGE
COMPACT — AIR-COOLED ENGINE
FASTER WHEEL BARROW LOADING
ANTI-FRICTION
BEARINGS

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON . . . WISCONSIN

Rental Housing Construction

(Continued from page 57)

Six feet six inches is a minimum width for kitchens with fixtures on both walls. Five feet six inches is the minimum for fixtures on one side only. A greater width in both cases is preferable. Ample light and good ventilation to remove hot air and odors are important. If dining space is provided, it should be so located that it does not hamper convenient performance of the work of food preparation. In order to count as one room in the FHA room count, the kitchen must be over 60 square feet.

It is pointed out that apartments designed for urban couples may well have small kitchens or kitchenettes, but in outlying locations where the tenants are expected to prepare all their own meals, they are to be avoided. The "strip kitchenette," installed in a niche or closet off the living room is not recommended under any circumstances.

FHA states that "perhaps the most common fault in kitchens is lack of adequate counter space." Hence, every possible device should be used to obtain a maximum of counter space. In housing for the lower-income groups, particular study must be given to kitchen equipment to keep it within reasonable cost. A limited amount of cupboard space will usually be sufficient for dishes, and since food purchases are largely made day by day, food storage can be reduced.

A later article will give further data on bedrooms, bathrooms, closets and specification requirements.

School Boys Learn to Build

(Continued from page 61)

to do some of the rough plastering. The finish coat was applied by a journeyman plasterer.

Excepting the plumbing, finish plastering, and some aid on particularly difficult parts of the work—such as laying brick for the fireplace—the completed house stands as the work of the vocational training classes and may be considered to be a monument to practical education.

Long before the boys finished their pounding, nailing and painting, girls in the Home Economics classes were planning how to furnish the home. A week of "open house," when parents and the townspeople in general could join with the youthful builders in celebrating their accomplishment, had been planned.

Even the High School Art classes were involved. To them fell the decoration of walls in the basement "rumpus room" and painting oil murals above the tile wainscoating in the bathroom.

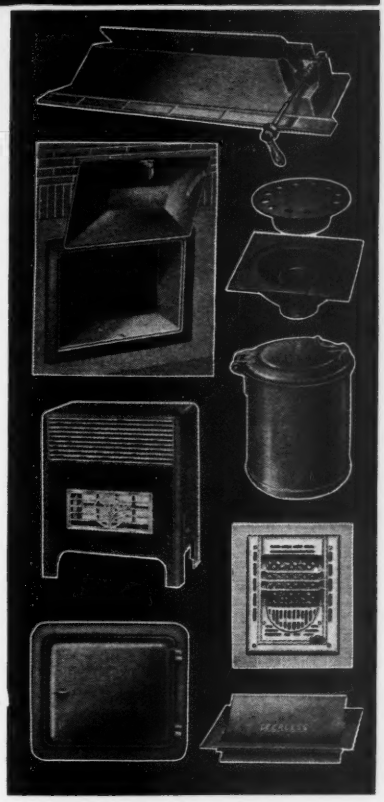
For furnishings, the girls were given a theoretical budget—a maximum amount that could be spent. Actually, they spent nothing. The merchants whose goods were selected were invited to lend them for the week of public inspection.

Mr. Simon says that the response of the storekeepers is such that more furnishings are being urged on the girls than can be put in the home.

For the week of public inspection the girls will become housekeepers and hostesses at several dinners and teas. The girls will entertain the boys who worked on the

(Continued to page 90)

PEERLESS
BUILDING SPECIALTIES



Our line of Building Specialties helps sell homes. Quality products built for lifetime service

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our complete line carried in stock at all times.

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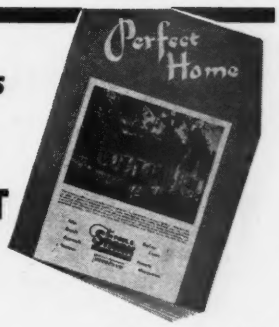
How Leading Builders WIN THE . . . QUALITY MARKET Through this prestige-building approach



As an alert custom builder, you are anxious to attain leadership in developing your community. *The Perfect Home* plan gives you a dignified monthly approach to influential people who share your appreciation of the civic and personal value of home ownership . . . people whose confidence and goodwill are a valuable asset to you.

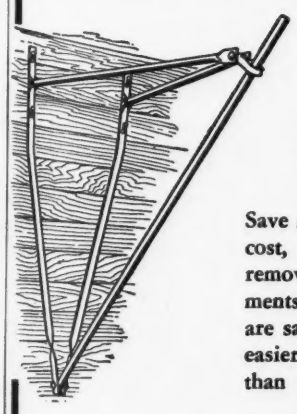
The Perfect Home magazine constantly fosters the desire to possess a more beautiful home. Its smart editorial content, striking pictorial treatment and cosmopolitan tone set new standards of comfort and convenience for your customers to achieve.

The Perfect Home plan gives you a *quality* magazine at a very low cost because *actual* editorial and mechanical costs are divided among all sponsors. You in turn apportion your cost locally among a group of co-sponsors *selected by yourself* and put under contract with the publishers.

Here's what the R. B. Whitaker Company, Winnetka, Illinois, says: "We have definite proof that this type of advertising is doing a real service, and we are certain it will continue to do so."

Established custom builders whose financial responsibility, leadership and reputation are unquestioned are eligible for an exclusive renewable franchise. Get *full* details. Write today to French-Stamats Company, Cedar Rapids, Iowa.

The modern way to save money on SCAFFOLDING



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Scaffold Brackets

Save money 3 ways: save on original cost, on labor cost of erecting and removing, and on cost of replacements. Reliable Scaffold Brackets are safer, stronger, more dependable, easier to handle, and more durable than wooden scaffolding. Can be used on wood or stucco.

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RELIABLE
SCAFFOLDING BRACKETS

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THE CONTRACTOR'S CHOICE FOR LARGER PROFITS

More and more Contractors are swinging to the Precision Built Improved Schlueter because they found that it enabled them to finish any floor at lower cost per square foot. It allows you to make that extra profit on the toughest job you ever tackled. Here is a sander especially designed for the professional. Over 40 years' experience in floor machine manufacture guarantee you trouble-free, dependable service. The perfectly balanced, resilient, rubber-covered sanding drum automatically conforms to every floor irregularity. It sands old or new floors to a beautiful ballroom finish as it works right up to the quarter-round, picking up all dirt and dust. The special, heavy-duty motor of ample reserve power, the full V-belt drive and the easy interchange switch for either 110 or 220 volts are but a few construction features, time tested and proven in years of service. Try it on a 5-DAY FREE Trial Offer.

Unconditionally GUARANTEED FOR 5 YEARS

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Send full details of your 5-day FREE TRIAL IMPROVED SCHLUETER offer. Also tell me how I can own it. Interested in time payments. ☐

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Home Designs FOR Today's Building

The impending tremendous nation-wide newspaper advertising campaign, sponsored by the American Builder and endorsed by the powerful Producers' Council, showing the public that it gets more home today for the money than ever before, will undoubtedly stimulate inquiries and foster the urge to build in uncounted thousands.

From Coast to Coast, local architects, contractors and dealers will be bombarded with all sorts of questions.

If you have at hand a copy of this new, unequaled Plan Book, you are equipped to answer almost any question that you may be asked.

For, as the glove fits the hand, so "Big-Value Homes" dovetails into the theme of the newspaper publicity—namely that builders are today putting up the best built, most completely equipped and most thoroughly modern homes in history, giving 25 to 40% greater value for the money than ever before.

172 pages, 8½" x 11½"—More than 300 Illustrations, Exteriors, Interiors, Construction Details, etc. —12 pages in 4 colors—Cloth-strip reinforced attractive heavy enameled paper binding.

Every one of its ninety homes was selected with that very object in view. Every home is a vast improvement over anything ever dreamed of ten years ago, at less cost. Every home is distinctive in its charm, its sound architectural lines, its convenient floor layouts, its economical use of space and materials. Every home will stand up under the most rigid FHA inspection. The whole assembly is a superb dramatization of the new 1938 home building technique—totally different from that of any yesteryear.

Armed with this wealth of facts, figures, beautiful interior and exterior views, ample diagrams, with here and there cost breakdowns, material lists, specifications and convincing feature articles, you are ready for the oncoming battle of turning your prospects from inquiries to interest, from interest to home hunger, from home hunger to sales and contracts.

CHAPTER I

"Value in Today's Homes"

Characterful Interior Invites Admiration
As to Working Plans
Homes or Stocks—Which?
Pictograph Analysis of Increase in Home Values
More House TODAY for the Money than in 1926 or 1929
Reduced Financing Costs Leave More Money for Actual Home Construction
Striking View of an Entrance to a Modern Home
Modern Efficiency Home in Scarsdale, Chicago Suburb
Front Cover Home (in New Jersey) Illustrates High 1938 Value
From Shirt-Front Bungalows to Distinctive Homes
Scientific Methods Reduce Home Costs
Two Money-saving Monfort Hills Colonials, getting the most out of enclosed space
Perfecting a Home Plan, with year-to-year improvements to meet trends in home buying
Modern Design that is beyond Comparison, creating new standards of home comfort, with specifications.

CHAPTER II

"Big-Value Small Houses"

Modernistic Manor from Oklahoma, with unusual flat-roof 2nd floor deck
"Hospitality Welcomes Here"—view of big living room in Chappequa home exemplifying the value built into today's good small homes
Old World Style in a delightful concrete masonry house
Three 6-room Colonials with architectural charm
Interesting Apartment Cottage at Berwyn, ideal for young couple or two elderly people
"Little but Livable" three 4 and 5-room Cottages at St. Albans
More for the Money Devon Cottage of 1938
Attractive Period Styled Small Homes in John C. Lindop's Broadview Development Feature Modern Planning
Master Built Plywood House in Detroit
Popular Hillside Heights Home that can be carried at about $30 per month, with cost breakdown and outline specifications
5-Room White Brick Bungalow
"Plenty of Room without Basement," with unique and attractive exterior
"$1,000 More House for the Money" in the Olsen Basementless "Utility" Houses, with Estimate Sheets and Specifications
A New England Basementless Home so well insulated that it costs only $5 per month to heat
Mayfair Acres Country Colonial whose good proportions and careful detailing put it in a class by itself
Compact 25′ x 25′ English Home very popular on Long Island, with view of its light, cheerful, well equipped kitchen
For the Small income near Detroit—a Model "House that Grows"
Unique small house in Connecticut, built at an angle.

See following page for partial contents of succeeding chapters and an unusual FREE offer.

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This offer good only in United States, Possessions and Canada

(Continued from preceding page)

CHAPTER III

"Low Cost Homes that Pay their Way"

7-room, all-lumber, "Dri-Built" Ohio Home, with interior view and specifications
Mayfair Gardens 1st floor bedroom and bath Model House
4-Room Bungalow with Dining Bay
28' x 28' Hillside Heights Colonial with 4 bedrooms
Glen Ellyn Cape Cod with good plan and fine detailing
Four $35 per month Colonials in New Jersey, with Dry Wall construction
"How to Build to Save Fuel," detailed tests of nine types of construction
"Common Sense in Kitchen Planning"
"How to Build Modern Coal Bins"
"How to Build Double Bunks"
Camera Study of the construction methods of one of the nation's most successful builders—Levitt & Sons
"50% More Outlets in 1938 House"
6-room Cape Cod—kitchen in front
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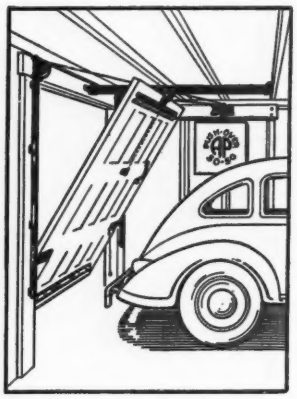

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School Boys Learn to Build

(Continued from page 86)

house with a dinner one day. Tea will be served to their mothers, and another day to mothers of Junior High School students who will next year enter the vocational training classes at the Senior High School. The house will be open for public inspection at designated hours. It will be flood-lighted at night.

When the open house week of community celebration is over, the merchants have removed their furnishings, and the flood-lights have been taken down, the house will have served its purpose as a novel part of modern education. It will be sold, and it will become the residence of the new owner.

But the completion of this structure is only a prelude to next year, says Mr. Simon.

Already the architectural drawing classes are preparing for next year's building operations. Each student has prepared preliminary designs for five small homes. His teachers help him select one design for further development. The usual floor plans and perspectives are drawn. All of these developed designs are submitted to a committee of local architects who select one as the house to be erected next year. The boy who drew the winning plans is designated as the architect of the building.

A problem has arisen in connection with next year's home, Mr. Simon says. So many Junior High School students have signified their intention of entering the vocational training classes in the building crafts that all of them cannot possibly be given work on a single house. The problem is not yet solved, he says.

It is emphasized by C. W. Allison, principal of the Senior High School, that the erection of a home by school boys is only one phase of the broad program for vocational training being undertaken in the Champaign schools. The public school system conducts night classes in building and other crafts to which men and boys who are not enrolled in the high school are welcome. Many of these night school students are veteran journeymen in their respective crafts. They are adding theory to their practical skill.

Jim Dunn gave an example of the results. "One of our best journeymen plasterers," he said, "took a night course. Although he has followed his trade for many years, not until the schooling could he estimate the number of yards of plaster required for a building. With his new knowledge he is taking a new interest in his work, and is a better workman."

The friendliness of the craftsmen toward the school training is, in the opinion of the school authorities, one of the most significant developments in the vocational study courses. The building trades unions are shortening the required three or four years of apprenticeship by the time spent in the school courses.

That there are uncertainties in the training—problems to be worked out—is freely admitted by Mr. Simon. He says that the educators are trying to confine the instruction to boys who have the inherent ability to succeed in mechanical work, and to divert others into activities in which they are more apt to make a success and be happy. So that, as far as possible, the classes will not include boys who try to work because of youthful enthusiasm, or a misconception of their own dispositions, the minimum age limit is set at sixteen years. For younger boys and older boys who are uncertain, exploratory courses, taking only one and one-half hours per day, are offered. In these courses, boys can test their interest in the building crafts. If they find that they do not care to learn a trade, they have lost only a little time, Mr. Simon explains.

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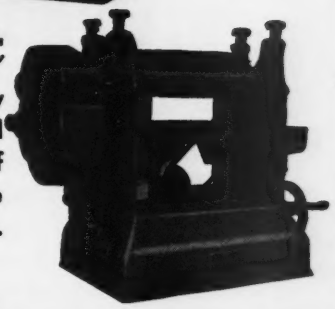

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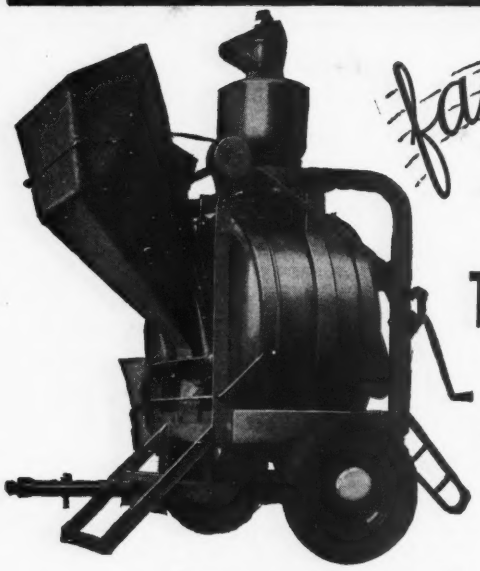

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Quality Row Houses in Philadelphia

(Continued from page 55)

been referring to the $4390 home as the "cheaper priced" and not as the "cheaper" home.) "Let us now deduct this $702 from the $5250 priced home and assume that the $5250 home also lacked all those items. That would bring this home down to $4548. Then, the house you have just looked at would be fairly priced at thirty over thirty-six times $4548. In other words, the price should be really $3790 instead of $4390."

"Whew," continued John, "we are beginning to see where that $5250 home is really by far the cheapest."

It was time for Ellen to speak up, because, in a sense, she had started the whole thing rolling. "John, we have waited for some time to get a nice new home that we could be proud to show our friends. You have always had your heart set on a stall shower. And I confess that I let myself down severely when I compromised myself on not wanting that tile kitchen wherein I pictured myself, as they do in the magazines, preparing a meal in beautiful and sanitary surroundings. And poor Junior deserves the use of a Play Room and the handy basement toilet. It would be a pity if we deprived ourselves of these things alone—after we wanted them so much. If we don't get them now we may never get them. Why should we buy an incomplete house—we deserve as much as anyone else."

John had no answer for Ellen; nor did he want to answer her. He had convinced himself that here was the only way to choose a home: to discuss it—not with an agent—but in the light of cold figures and with the one who is to share it for many happy years to come.

A subsequent visit to the builder showed that the down payment on the $5250 home, as compared with the $4390 home would be as follows:

	$5250 House	$4390 House
10% minimum cash	550	490
20% minimum cash	1050	890

In other words, the "down payment" to purchase the better home would be but $60 more than the cheaper priced home. The additional carrying charge was also explained by the builder; it totaled less than $40 per month under either financing plan, on the $5250 home.

It is hoped that others will profit by the intelligent way in which Ellen and John approached and concluded their home-buying problem.

Ante-Bellum Homes of Historic New Orleans

(Continued from page 59)

nent detail in each being the beautiful mantels of white Italian marble surmounted by full-length mirrors enclosed in gilt frames. From the sixteen to eighteen foot ceilings hang two or more crystal chandeliers in harmony with smaller wall lights the myriad lights of which are reflected in the flawless mirrors and give an appearance of fairyland. The room is furnished in excellent period furniture, the excellent rosewood and mahogany pieces of masters such as Seignouret and Mallard.

Rising from the floor of the hall is a long stairway with mahogany balustrade. The stairway in some cases extends to the second floor in an unbroken line, but in others is composed of two flights set in a graceful curve or at angles to each other. The

(Continued to page 94)

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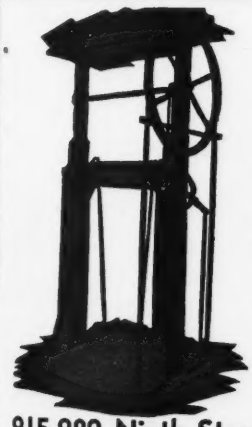

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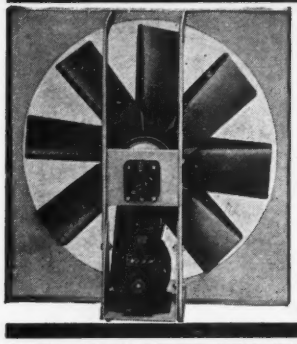

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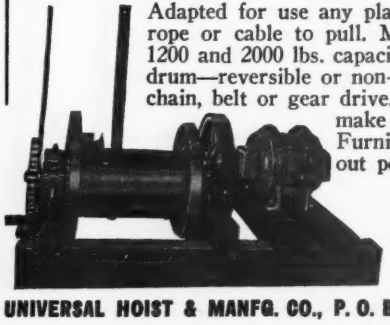

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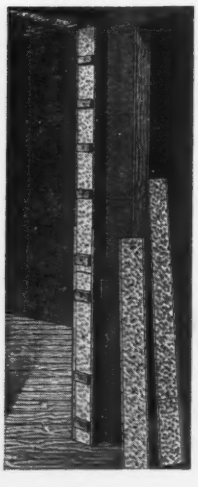

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Ante-Bellum Homes of Historic New Orleans

(Continued from page 92)

second floor is given over exclusively to living quarters for the family although one room might be set aside for the lady of the house to receive intimate friends or to use in whatever way she sees fit. The rooms are exceedingly large and are furnished with massive four-poster beds, mahogany armoires, and smaller pieces. The windows, again are long and narrow, and in some cases give access to a small porch decorated with ornamental iron work and supported by artistic brackets.

So as to facilitate drainage the houses are built on ground raised a foot or so above the natural level and held back by a concrete or granite curbing which serves as a base for the heavy, ivy-covered iron fences. The grounds in nearly every case are spacious and given over to informal gardening. Shrubbery, usually of the flowering variety, was preferred to flowerbeds, and numerous trees, some small and some large, were planted here and there. Although live oak is occasionally seen the perpetual shade beneath its spreading branches prevented plant growth of any kind and the magnolia, hackleberry and sycamore were more commonly employed. But the forte of these old homes is the various species of vines, purple bignonia, morning glory, virginia creeper, rosa montana—that climb along the side of the house, entwine themselves in the ironwork, twist around the pillars and overhang the fences.

The Garden District embraces quite an extensive area and in the hundred years and more of its existence many changes have taken place within it. Several of the original homes have been torn down to make way for more modern structures, others have been converted into apartment houses, asylums and commercial establishments, and many have been destroyed in various ways. The finer homes were built on the streets running with the river such as Chestnut, Coliseum, Camp and Prytania and the principal cross streets—Jackson, Louisiana and Washington Avenues.

One of the most beautiful homes in the Garden District is situated at Coliseum and Fourth Streets and was built in the 50's by Julius Koch. It is interesting also from a Historical standpoint as it was the home of James B. Eustis, United States Senator and in 1876 appointed by Cleveland to be first ambassador to France. It is not, however, a typical District home, its architecture showing more English influence than Greek. Irregular in shape, it has numerous projections and steep gables. The V's of the gables are fringed with ornate wood carvings and serve as coverings for small, enclosed porches. Following the outline of the house on the second story is an open gallery lined with a cast iron railing. The well-kept garden is enclosed by an iron picket fence.

On Louisiana Avenue near Prytania is a large white residence, built along the lines of a Louisiana plantation home, known as the Freret Mansion. It was built in the 50's by James P. Freret and its great size is understood when one remembers that the Freret family of 17 boys and girls were reared within it. It is a two story structure with no outside stairway and the bottom floor set flush with the ground. The second story porch is fringed with a wooden railing with rotund balusters and is divided by a large Doric columns. The porch is supported by square brick tiers running to the ground and forming a veranda. The gently sloping slate roof is broken by two dormers having arched windows.

At the intersection of Camp and First Streets is an imposing edifice, a fine example of Greek Revival architecture, and interesting historically because in one of its high-ceilinged rooms, Jefferson Davis, president of the Confederacy, died. It is two stories in height excluding a high attic, built of brick and stucco, and has a porch with cast iron railings on each floor in the front. Like many Garden District homes it is raised several feet off the ground and has a short, unpretentious central stairway, the graceful columns of the bottom porch are of the Ionic order and the upper a modified Doric. Not often seen are the high parapets on either side of the house which serve to hide the V-slope of the roof.

Throughout this park-like section of New Orleans are dozens of other houses worthy of note by, not only the architectural minded visitor, but also everyone who enjoys the beautiful and the unusual. Although much of the original beauty has been tempered by the hand of time, what it has lost in freshness it has made up in homely charm. And, in spite of an insidious commercialism along its fringes it still remains the exclusive neighborhood that it always was, for this peaceful section with its solid homes and stately trees and verdant shrubbery defies change and promises to be generations from now what it is at present—a Garden District.

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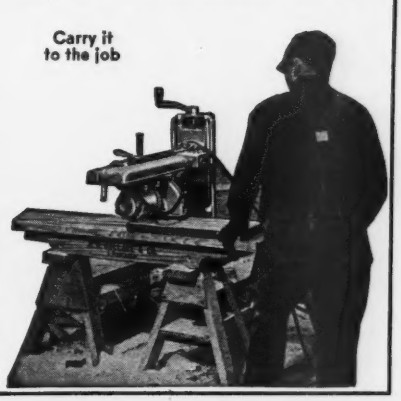

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For profit and salability build charming homes of fire-safe, permanent concrete.

CONCRETE HOMES

Ask us for information on the fastest growing type of home construction.

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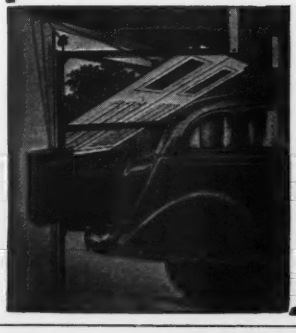
33 West Grand Avenue, Chicago, Ill.

EVERY CAR OWNER CAN AFFORD THE WAGNER



"CANOPY" OVERHEAD GARAGE DOOR

"Canopy" hardware converts old doors (one, two or more sections) into modern overheads. Also provides a low cost one-piece door for new structures. Easy to install —weather-tite — smooth operation. WRITE TODAY FOR LITERATURE ON WAGNER OVERHEAD DOORS AND HARDWARE!

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MANUFACTURING COMPANY
Dept. AB-738, Cedar Falls, Iowa

STERLING *Balanced* WHEELBARROWS HAVE THESE FEATURES

1. 10 Spoke Wheels
2. Channel Steel Legs
3. Self Lubricating Bearings
4. Malleable Axle Brackets
5. Malleable Wheel Guards
6. Interchangeable Parts
7. Square Bent Leg Shoes
8. V-Braces and Braces Supports
9. Clear Maple or Tubular Handles
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Heavy Continuous Rod in Top Edge of Tray

No. S-18 BARROW

STERLING WHEELBARROW CO. MILWAUKEE, WISCONSIN

SELECTED CATALOGS

For the Service of Builders, Contractors, Architects, Dealers

The publications listed below may be obtained without charge either by using the coupon, listing the numbers desired and mailing to American Builder, 105 West Adams Street, Chicago, or by applying on your business stationery to the manufacturers direct, in which case kindly mention this publication. Either the titles or the numbers may be used in ordering. This list is an editorial feature for convenience of our readers.

169—Mall Portable Electric Tools—"Mall Industrial Equipment" is a 44-page loose-leaf portfolio illustrating the combined Wappat and Mall Tool Co., lines of portable electric hand saws, drills, planes, mortisers, concrete vibrators, surfacing machines, grinders, polishers, rotary files, etc. Where labor time is money, these tools are great profit-makers.—MALL TOOL CO., 7740 S. Chicago Ave., Chicago.

170—Revised Kimsul Consumer Book—"Year 'Round Insulation," well known for its interesting and convincing method of presenting insulation facts, has been revised as a 24-page pictorial portfolio.—KIMBERLY-CLARK CORP., Neenah, Wis.

171—Coolvent System of Ventilation—Two new bulletins show how the Coolvent system will cool and ventilate the home. Sizes, capacities and installation details are included.—AUTOVENT FAN & BLOWER CO., 1805 N. Kostner Ave., Chicago.

172—"Celotex Carpenters Manual for Interior Finish"—an 80-page carpenters' manual for the construction of interiors presents text, illustrations and detailed working drawings which tell in simple terms how to apply Celotex materials to achieve decorative interiors of many architectural styles from Colonial to modern. Installations of interiors for homes, offices, stores and theatres are explained from rough layout stage to final decorative touches. This manual should be helpful to carpenters, architects, contractors, decorators and builders.—THE CELOTEX CORP., Chicago.

173—"Western Pine Camera Views for Home Builders"—the 1938 edition of this popular portfolio contains 32 pages and is plastic bound. It gives a pictorial presentation of home building ideas based on actual installations of Idaho white pine, Ponderosa pine, and sugar pine. It shows attractive low-cost homes as well as more pretentious structures. New treatments for sidewalls, enameled wood work, formal paneled rooms, intriguing cabinets, cheery modern kitchens, built-in bunks and knotty pine playrooms are a few of the illustrated suggestions contained.—WESTERN PINE ASSN., Yeon Bldg., Portland, Ore.

174—"Vibration for Quality Concrete"—a 32-page illustrated handbook explaining the principle of mechanical vibration for better concrete. Methods and equipment are illustrated, record of numerous tests presented, and a recommended specification is added. A bibliography gives numerous references, including a list of 19 manufacturers of vibrating equipment.—PORTLAND CEMENT ASSN., 33 W. Grand Ave., Chicago.

175—"Announcing Lehigh Mortar Cement"—A new data sheet gives the facts regarding this material which was put on the market in the Middle Western states in the spring of 1937. A handy pocket manual, "What the User Should Know about Lehigh Mortar Cement," tells how to mix, how to estimate, and how to apply.—LEHIGH PORTLAND CEMENT CO., Allentown, Pa.

176—The Non-Stick Window—Condensed information on these prefabricated weatherstrip economy windows is presented in an attractive folder showing the types of homes on which these windows have been used, and featuring the fuel-saving advantages of the N.S.W. window.—N. S. W. CO., 2137 Gratiot Ave., Detroit, Mich.

177—Embassy Factory-Fitted Window Units—A very attractive 16-page brochure by R & M reveals the details of this new completely weatherstripped, factory-fitted, double-hung window unit. A picture series shows how easy these windows are to install, as well as their attractive appearance in the home.—ROACH & MUSSER Co., Muscatine, Ia.

178—Trimpak Doubl-Glazed Window—A new circular introduced this new perfected Doubl-Glazed window which is used with standard frame; the inner glass is removable for cleaning not oftener than once a year. The inner glass is air-tight, prevents heat loss, and makes storm sash unnecessary.—TRIMPAK CORP., 44 Whitehall St., New York City.

179—Fenestra Steel Windows and Doors—A 24-page catalog gives full description with pictures, detail plates and two color types and sizes charts of all Fenestra "commodity" products, including residential casements and accessories, basement windows, commercial and industrial windows, security windows, screens, casement and industrial doors.—DETROIT STEEL PRODUCTS CO., 2250 E. Grand Blvd., Detroit.

180—"Windows of Alcoa Aluminum"—A loose-leaf, ring-bound portfolio of 60 pages has been prepared by the Aluminum Co. of America to discuss the type of windows suitable for large buildings, homes and small apartments. The first half of the book presents aluminum windows in general, while the second half describes the windows fabricated by eight of the leading non-ferrous window manufacturers.—ALUMINUM CO. OF AMERICA, Pittsburgh, Pa.

181—Snugger—"For Doors that Won't Stay Closed" is a clever little folder showing the operation of the new Win-Dor closer that pulls doors snug and keeps them shut. This little piece of hardware is easy to install; no mortising, just screw it on. A companion catalog from the same house is entitled, "Things You Ought to Know About Casement Windows." This is a 20-page de luxe brochure in two colors featuring casement windows and their control through Win-Dor casement operators.—THE CASEMENT HARDWARE CO., 406 N. Wood St., Chicago.

182—Barber Genasco Products—A new comprehensive catalog of 56 pages and covers presents the complete Barbar line of asphalt shingles, roofings, sidings, floorings, waterproofing materials and protective products. An outstanding feature of this new catalog is the description of the Weatherometer, a mechanical device for the weather testing of roofing materials.—BARBER ASPHALT CORP., Philadelphia.

184—"Elgin Steel Cabinets"—A 4-page data sheet illustrating these standard steel units adaptable for use in laboratories, schools, hospitals, churches, clubs, homes, stores and throughout industry.—ELGIN STOVE & OVEN CO., Elgin, Ill.

American Builder,
105 W. Adams St.,
Chicago, Ill. (July, 1938)

Please have the following Catalogs listed in this issue sent me—

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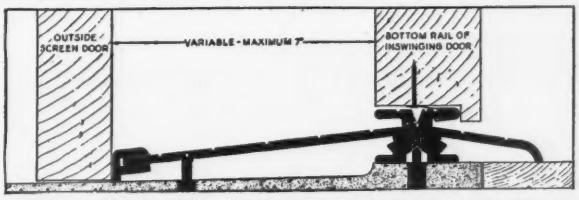
MONARCH Variety Woodworker

This universal portable machine is ideal for general work. It combines a saw bench, jointer, mortiser and can be equipped with a band saw. Also does many other operations.

Write for details

AMERICAN SAW MILL MACHINERY CO.
60 Main St. Hackettstown, N. J.

DOOR SADDLES
FOR ENTRANCE DOORS WITH SCREEN DOORS



MODEL 32-B FOR SCREEN DOOR ON OUTSIDE

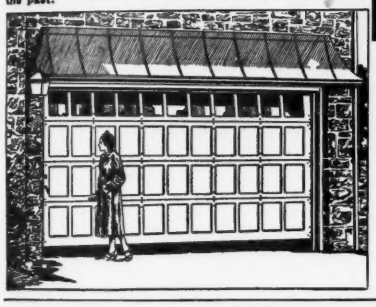
This newly patented all brass unit seals door against draft and insects, and is fitted with adjustable stop for outside screen door. Also Model 38, for screen door on *inside*. Both saddles allow ½" rug clearance.

Write today for special folder and prices. See Catalog in Sweet's

ACCURATE METAL WEATHER STRIP CO., 218 E. 26th St., New York

Everyone wants this garage convenience!

Kinnear RoL-TOP Doors assure the garage door satisfaction that every owner, renter or buyer wants—and demands! They open upward over swollen ground, obstructions, ice, snow, etc. Perfectly counterbalanced, they make the old fashioned tug-n-struggle garage door a thing of the past.



KINNEAR RoL-TOP DOORS
(WOOD OR STEEL)

RoL-TOP Doors are completely weathertight and are free of service worries. They can be equipped for electrical operation, if desired. Made in any size, of wood or steel. Easy to install. Ideal for commercial or residential use. Write for complete details!

The KINNEAR MANUFACTURING COMPANY
1560-80 Fields Ave., Columbus, O.

"BRADLEY BRAND"
the standard of comparison
in **HARDWOOD FLOORING**
OAK - - - - - BEECH

BRADLEY BRAND

ALSO
GUM + OAK TRIM AND MOULDINGS
AT YOUR DEALERS

BRADLEY LUMBER COMPANY
OF ARKANSAS
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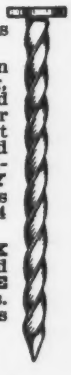
HELYX DRIVE SCREW NAILS

Build Screwed Together Homes.



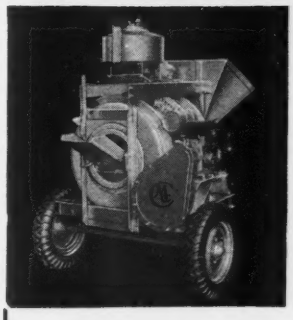
Drives like a nail—turns and holds like a screw.

You know how common nails work out in siding, caused by expansion and contraction due to weather elements. The heads rust off—the siding warps and comes loose. Siding attached the **HELYX WAY** stays put because it is screwed on. Size 1¾" No. 4 Sc. Ga.

Don't overlook—**HELYX FLOOR SCREWS** and **HELYX CONCRETE NAILS**—cut erection costs. Ask your jobber or ask us for samples.

THE HILLWOOD MANUFACTURING CO.
21700 ST. CLAIR AVE. CLEVELAND, OHIO

IT'S THE *New* C.M.C.
3½S End Discharger



Here's big daily production in a small compact Mixer. Moves fast from job to job—easy to maneuver on the job. Low front, high back, gated batch hopper for quick, easy loading. Get surprising price on this big producing CMC 3½ S. Whatever you need in a Mixer we've got it; also Dual Prime Pumps, Hoists, Saw Rigs, Pneumatic Tired Carts and Barrows. Write for catalog.

CONSTRUCTION MACHINERY COMPANY
Waterloo, Iowa

MAKES soft wood... FINISH like Hardwood

Laux **REZ** CLEAR SYNTHETIC RESIN **SEALER**

Quick drying *Economical*

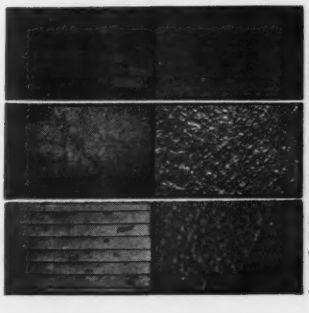
STOPS GRAIN RAISE ON FIR PLYWOOD

Use REZ on fir plywood and soft woods and finish them "like hardwoods." No grain raise, beautiful, smooth surfaces that stay smooth with any kind of stain, paint, enamel. Prevents moisture absorption. Seals, primes, sash and doors against swelling, binding, weather and wear before and after construction. Cuts finishing costs, gives a better job. Many other uses. Remember, there's nothing else like REZ, because *nothing else stops grain raise* like REZ. Buy through principal jobbers, dealers.

I. F. LAUCKS, Inc.
Seattle, Wash. Lockport, N. Y.

For large jobs order fir plywood "Rezited-at-mill"

SPRAYING WATERPROOFED COLORED STUCCO



OFFERS BIG EARNINGS

Buildings everywhere need this permanent surfacing and resurfacing process. It fuses a waterproofed plastic mixture on all masonry. It fills all cracks and checks and can be applied in any thickness desired, and in 30 colors and shades. Time proven by over 10 years actual use the world over.

With Colorcrete spraying machine you can supply a permanent decorative surface in any shade at amazingly low cost. Operators report costs of 2c and up per sq. ft. and sell up to 7c. Some have paid for their equipment from first few jobs. Machine capacity up to 1000 sq. ft. per hour.

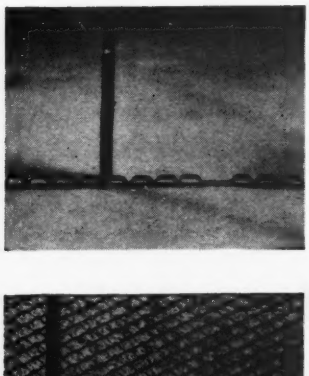
Get the facts. Learn about Colorcrete and its big money making possibilities. Two Colorcrete books tell the whole story. Write today.

COLORCRETE INDUSTRIES, INC.
500 Ottawa Ave., Holland, Michigan

More Space for Sale in the Homes You Build with

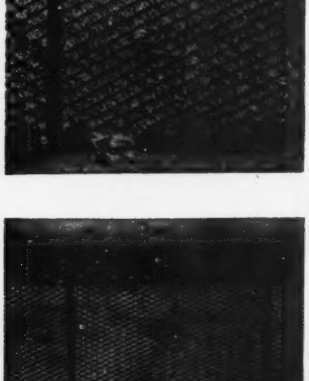
MILCOR Solid Plaster Partitions in non-bearing walls

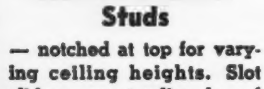
Patent No. 2,105,770



Continuous Crimped Floor Runner

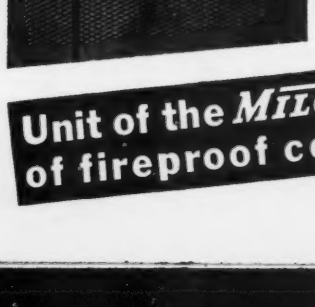
— with grooves for inserting Channel Studs at any point in the wall. Flat section every 12" for attachment to floor.

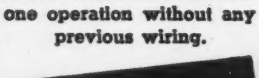




Slotted Channel Studs

— notched at top for varying ceiling heights. Slot slides over standing leg of Ceiling Angle Runner — bottom slips into place in grooves of Floor Runner.





Ceiling Angle Runner

— attached to ceiling with bolts, nails or rawl drives. Milcor Metal Lath tied in one operation without any previous wiring.

The sensation of the year in fireproof construction—the Milcor Solid Partition and Furring System —

is also meeting a real need in small homes. Occupying only 2" of floor space, this construction saves 4" or more per partition — especially important in planning closet space.

There is no muss on the job or expensive cleanup on completion — remodeling jobs come your way on this feature alone. In addition, there are *these extra recognized advantages:* Full two-hour fire rating — Increased strength, especially under impact — Reduced dead floor load (1/3 as much as some types of fireproof partition) — Reduced sound transmission.

In small homes or large projects the Milcor Solid Partition and Furring System *costs no more* than other types of construction, because of the *amazing speed in erection* made possible by three simple prefabricated members.

Write for the Milcor Solid Partition Bulletin, today.

★ A regular workman can erect an average of 150 studs per hour. This was accomplished repeatedly on the Ten Eyck Housing Project in Brooklyn, N.Y.

F-34

Unit of the MILCOR System of fireproof construction

MILCOR STEEL COMPANY

MILWAUKEE, WISCONSIN CANTON, OHIO

Chicago, Ill. Kansas City, Mo. La Crosse, Wis.

Atlanta, Ga. New York, N. Y.

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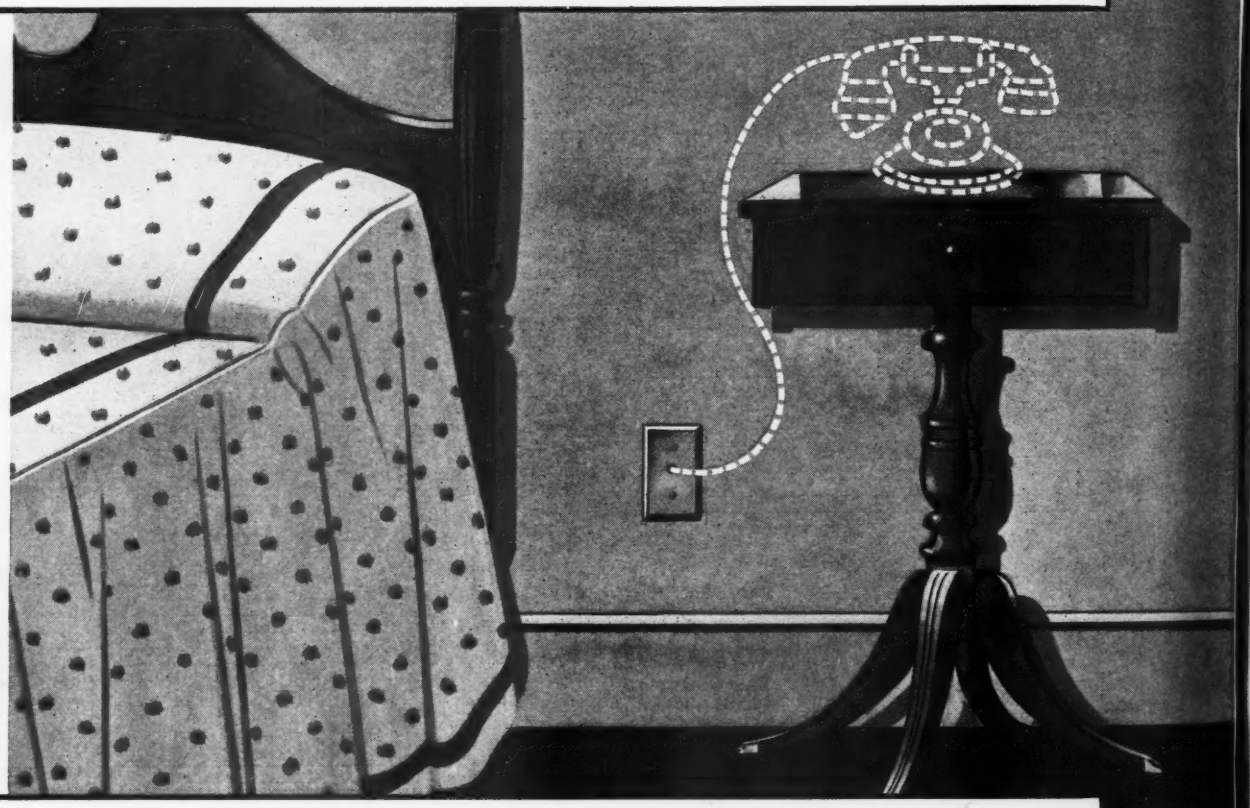
NOTICE TO ADVERTISERS—Forms for the August number of the American Builder and Building Age will close promptly on July 15. New copy, changes, order for omissions of advertisements must reach our business office, 105 West Adams St., Chicago, not later than the above date. If new copy is not received by the 20th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts. AMERICAN BUILDER AND BUILDING AGE.

TOMORROW'S TELEPHONES will help you sell TODAY'S HOMES



CHILDREN GROW UP . . . family needs change . . . your prospects will appreciate homes built for tomorrow as well as today. Built-in telephone conduit—planned for both present and future telephone needs—is an "extra" that has helped sell thousands of homes.

• COSTS LITTLE DURING CONSTRUCTION

One or two lengths of small pipe—running from basement to upper floors—usually provide adequate conduit for the small home. The cost per telephone outlet is about the cost of an electrical outlet.

• PRESERVES BEAUTY OF WALLS AND FLOORS

Small outlet plates give access to the conduit. When wires are installed—now or years from now—walls and floors need not be pierced, exposed wiring is avoided.

• CARRY WIRES THROUGH BLOCKED WALLS

Insulation, fire-stops, stud bracing and many of today's building methods and materials make it impossible to "fish" wiring through completed walls. Conduit built in during construction allows wiring changes or additions at any time—with all wiring concealed.

Your telephone Company's "Architects' and Builders' Service" will be glad to help you plan practical and economical conduit layouts for your houses—without charge.

If you're "Window Shopping"- LOOK!

Certainly you are interested in WINDOW VALUES! Certainly, you want your copy of this 16-page, 2-color catalog describing the NEW Truscon Residential Double-Hung Steel Windows, Series 138. *Write for it TODAY!* • Think of it! At costs within easy reach of small home builders and owners, you can have Truscon-Bonderized Double-hung Steel Windows with baked-on priming coat of paint; Tubular construction of sash; Spring bronze weatherstripping; Spring balanced construction; steel hardware, cadmium plated, brushed finish. (Enduro Stainless Steel or solid bronze hardware at slight extra cost); Flush installation of screens and Truscon "Tempryte" insulating windows. Five types and twenty-four sizes are standard. *TRUSCON RESIDENTIAL DOUBLE-HUNG STEEL WINDOWS ARE PACKAGED IN DURABLE CARTONS FOR YOUR PROTECTION!* • Send for your free copy of complete, new catalog. Fill in coupon below, MAIL TODAY!

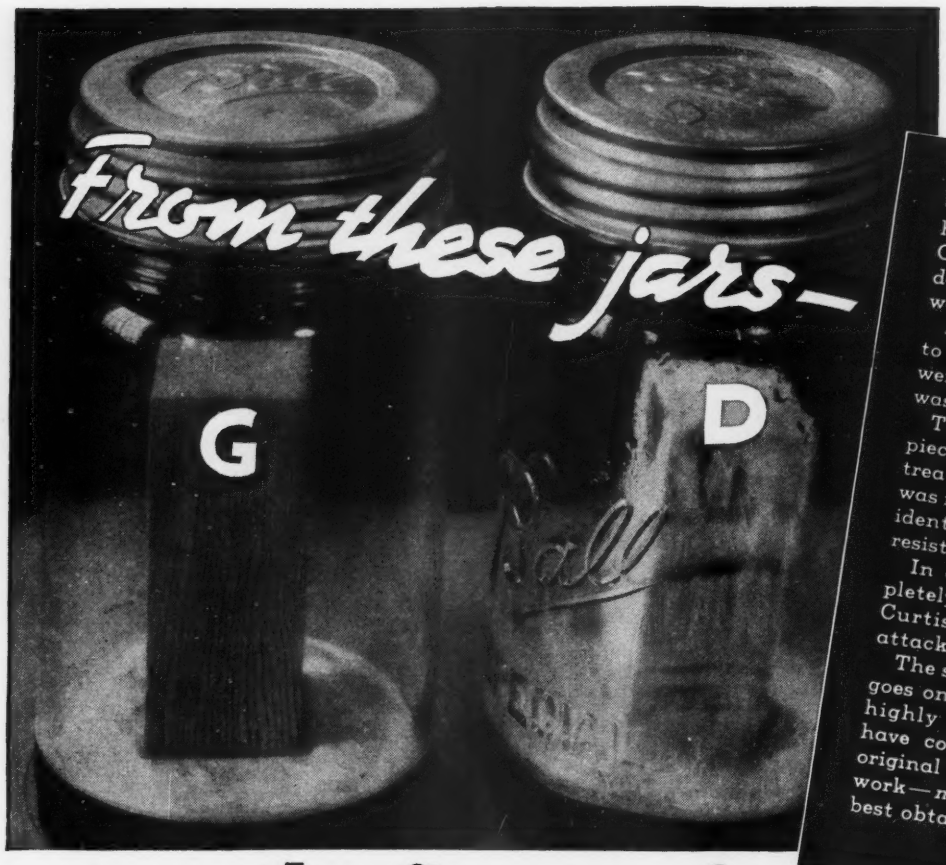
TRUSCON
STEEL COMPANY
YOUNGSTOWN, OHIO
57 SALES-ENGINEERING OFFICES
SUBSIDIARY: REPUBLIC STEEL CORPORATION

Okay, Truscon! Send my copy of your new catalog which gives complete details about your New Series 138 Double-Hung Steel Windows. I understand this does not obligate me in any respect.

Name _____

Address _____

City _____ State _____



EIGHT YEARS AGO— history was in the making in the Curtis Laboratory. For the newly developed Curtis Toxic Treatment was to be tested!

Agar jelly was placed in each jar to provide fungus food. The jars were sterilized, and Lenzites trabea was placed in each.

Two test blocks were cut from a piece of sapwood. Block "G" was treated with Curtis Toxic. Block "D" was not. Otherwise conditions were identical. No untreated wood could resist such a severe test.

In a short time "D" was completely decayed. But "G," with the Curtis treatment, was not even attacked.

The search for a better toxic still goes on, but continuous tests and highly satisfactory field service have convinced Curtis that their original toxic treatment for woodwork—*never changed*—still is the best obtainable.

came the Secret of *Woodwork that resists decay!*

This is a story of a war that was won—a war against Lenzites trabea!

Lenzites trabea is the most common species of fungi that attacks exterior woodwork. For years, treatments of various oils and salts had been used to resist this destructive agent in structural timbers, but none were satisfactory for builders' woodwork.

Then Curtis went to work. We knew that heartwood had natural ability to resist decay. But the use of heartwood alone in exterior woodwork was out of the question because lumber is not cut that way for commercial purposes. Run of the mill lumber always includes some sapwood. So we set out to develop a treatment that would also make sapwood decay-resistant.

For many months, Curtis research men checked test against test, solution against solution, species against species. Cultures of various fungi were grown in jars, kept in incubators. Two years elapsed before a successful treatment was perfected.

When the secret behind the jars was known, science had won another battle against nature. For then both heart and sapwood of the species used for making exterior woodwork could successfully resist Lenzites trabea! And since January 1, 1933, when Curtis started to ship their toxic-treated woodwork, *not one case of decay has been reported in a Curtis-treated product.*

We prefer to call our woodwork decay-resistant, not decay-proof. But severe tests, made regularly since the present toxic became the standard Curtis treatment, have failed to show any breakdown under decay fungi. In addition, the chemicals used by Curtis in their toxic treatment remain the outstanding agent for the prevention of decay in woodwork!

As with many other important improvements in the industry, Curtis was *first* to supply toxic-treated woodwork. Nearly six years of success stand behind this treatment. Seventy-two years of experience stand behind the name of Curtis Woodwork. Together, these records are your assurance of superior quality and lasting performance in woodwork of all kinds.

CURTIS COMPANIES SERVICE BUREAU

DEPT. AB-8, CLINTON, IOWA

OUTSTANDING FEATURES OF THE CURTIS TOXIC TREATMENT

1 It is an oil treatment—builds up a surface film, resists grain-raising and swelling, improves putty adherence.
2 Considered to be the most permanent treatment in use today, does not "bloom," evaporate or wash away.
3 It is odorless—the solvent vehicle carries oil and toxic into the wood—then evaporates.
4 It is not harmful to paint, oil stains or varnish.

1865 CURTIS WOODWORK

Canadian Inquiries
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Ottawa, Ontario

AND OTHER CURTIS PRODUCTS—Silentite Double-Hung and Casement Windows · Exterior and Interior Doors · Entrances · Mantels · Frames · Trim · Molding · Panel Work · Cabinet Work · Kitchen Cabinets · Stairways · Shutters · Screens · Storm Doors and Windows · Garage Doors · Mitertite Door and Window Trim

BUILD THE WEATHERWOOD* INSULATED WALL

– Complete Low-Cost Wall Construction that Includes Insulation – Lath – Sheathing.

OUTSIDE – WEATHERWOOD INSULATING SHEATHING

Insulates, braces, protects against weather during construction and throughout life of house.

Applied quickly—every joint goes over stud, sill or header, thus reducing wind infiltration.

Cuts readily—an easy material on saws and tools.

INSIDE – WEATHERWOOD REINFORCED INSULATING LATH

Providing both *insulation and plaster base in one product. Note joint reinforcement.*

Sheets span 3 studs—yet one man handles easily.

Exclusive USG reinforcing to minimize plaster cracks.

It's a grand sales opportunity for you to offer a complete wall that has the distinctive features of rigidity and weather-protection, plus the year-round comfort and heating economy of insulation. And the total cost of the USG Weatherwood Insulated Wall is low!

Weatherwood Reinforced Lath combines insulation with a natural plaster base in one product. Weatherwood Lath is reinforced at each horizontal joint with a patented metal mesh to reduce the possibility of unsightly plaster cracks.

Weatherwood Insulating Sheathing is strong, rigid, durable and a barrier to wind and other elements. It is 25/32″ thick with great bracing strength. Its large sheets go in place easily, quickly. Weatherwood Sheathing is heavily coated with asphalt—provides weather protection during construction and for the life of the building.

The USG Weatherwood Insulated Wall provides insulation and weather protection at low cost. Let us give you complete details. Ask your USG representative or return this coupon.

United States Gypsum Company

300 WEST ADAMS ST. CHICAGO, ILLINOIS

Sales Offices at:
Atlanta, Ga. • Baltimore, Md. • Birmingham, Ala.
Boston, Mass. • Buffalo, N. Y. • Cincinnati, Ohio
Cleveland, Ohio • Dallas, Tex. • Denver, Colo.
Detroit, Mich. • Houston, Tex. • Indianapolis, Ind.
Kansas City, Mo. • Los Angeles, Cal. • Milwaukee, Wis.
Minneapolis, Minn. • New York, N. Y. • Omaha, Neb.
Philadelphia, Pa. • Pittsburgh, Pa. • Portland, Ore.
St. Louis, Mo. • San Francisco, Cal. • Washington, D. C.
*Registered trade-marks

USG

UNITED STATES GYPSUM COMPANY
300 West Adams St., Chicago, Ill.

Please give me complete details on the USG Weatherwood Insulated Wall.

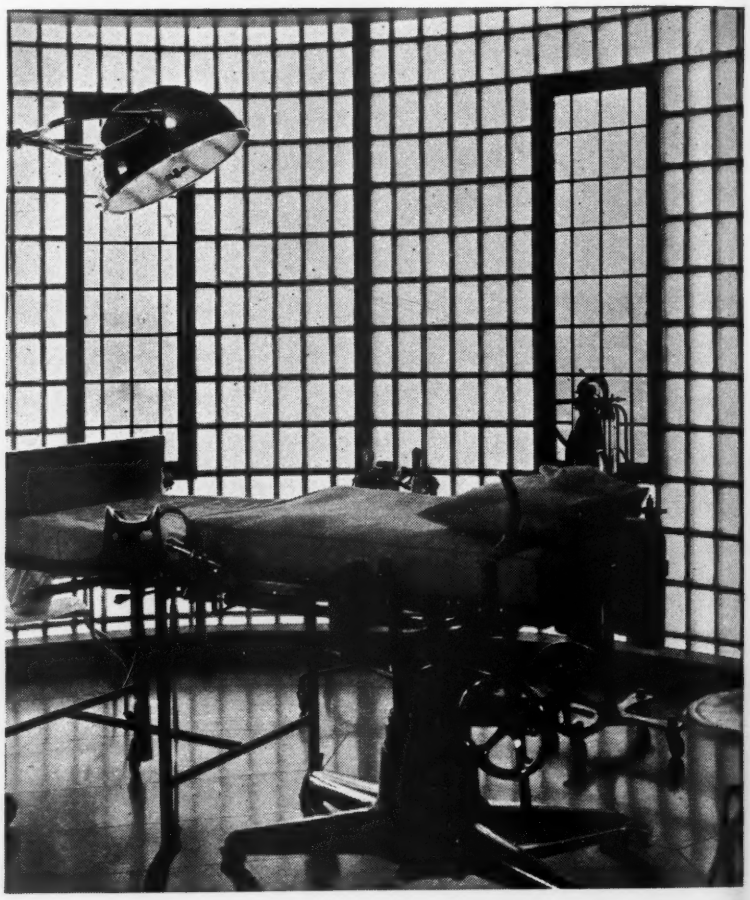
Name.....

Address.....

City.....*State*.....

AB-8

Light...THE MODERN WAY



WHERE *Light* IS VITAL...

● More and more, Insulux is being used in hospital operating rooms where adequate Light, properly diffused, and Insulation—to help maintain constant conditions of temperature and humidity—are prime requisites.

In hospitals, as well as in other types of buildings, all over the country, INSULUX is providing greater protection from heat, cold and noise, and greater cleanliness and more economical maintenance. In one material you have a product that Provides Insulation—Admits Light—Retards Sound Transmission—Defies Weather—Retards Heat Flow—Requires No Painting—Resists Fire—Is Impervious to Grease and Odors—and withal is strikingly beautiful. In INSULUX you will find the answer to innumerable problems of design. Write for complete illustrated details. Owens-Illinois Glass Company, Toledo, Ohio.

St. Joseph's Hospital, Alton, Illinois. O'Meara & Hills, Architects

OWENS-ILLINOIS *Insulux* GLASS BLOCK

PIONEERED AND PERFECTED BY OWENS-ILLINOIS "*First in Glass*"

OWENS-ILLINOIS GLASS COMPANY
Industrial and Structural Products Division
303 Madison Avenue, Toledo, Ohio
Please send, without obligation, complete information about the use of Insulux Glass Block in commercial and industrial planning.

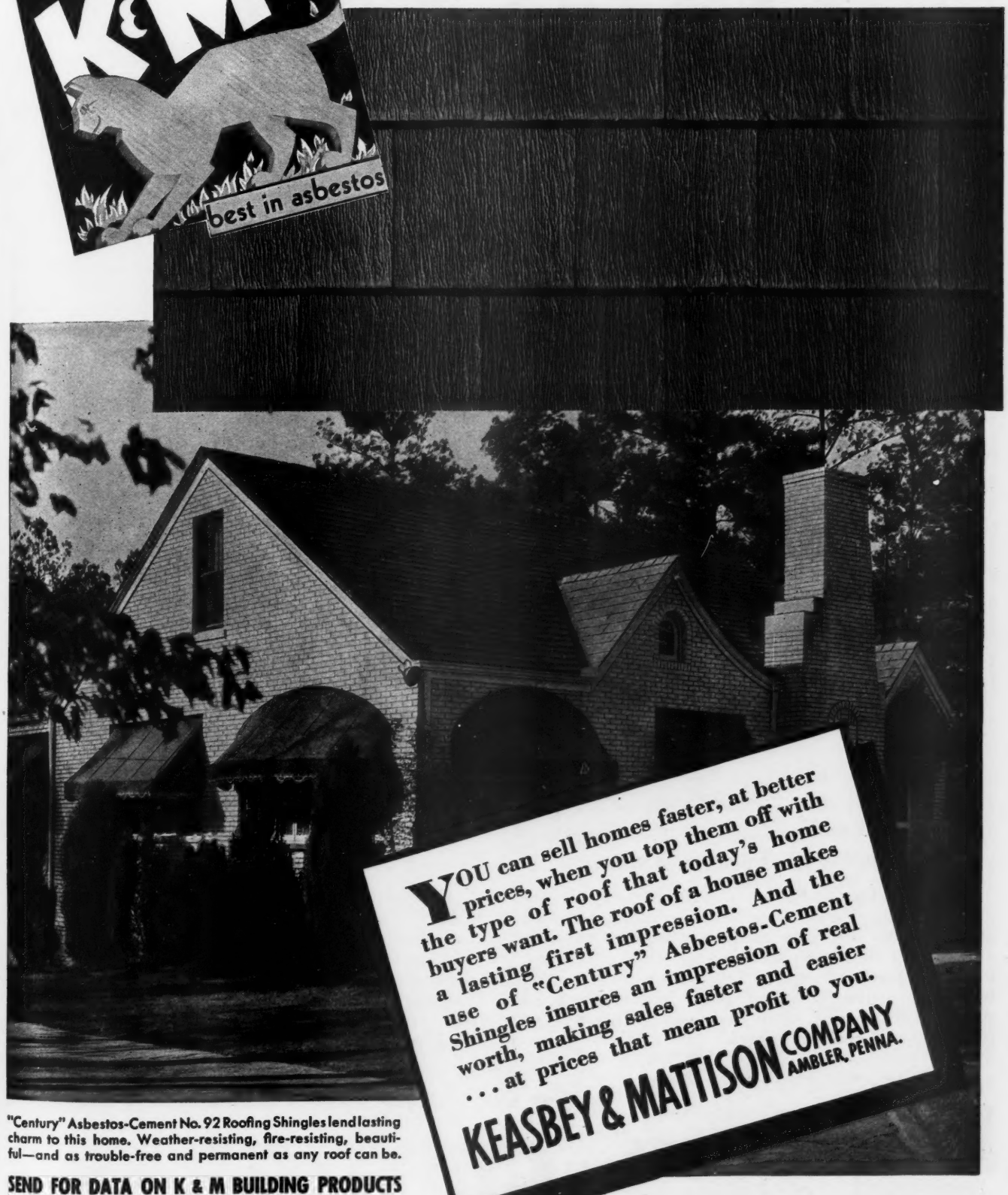
Name _____

Address _____

City _____

County _____ *State* _____

ROOFING SHINGLES



"Century" Asbestos-Cement No. 92 Roofing Shingles lend lasting charm to this home. Weather-resisting, fire-resisting, beautiful—and as trouble-free and permanent as any roof can be.

YOU can sell homes faster, at better prices, when you top them off with the type of roof that today's buyers want. The roof of a house makes a lasting first impression. And the use of "Century" Asbestos-Cement Shingles insures an impression of real worth, making sales faster and easier ... at prices that mean profit to you.

KEASBEY & MATTISON COMPANY
AMBLER, PENNA.

SEND FOR DATA ON K & M BUILDING PRODUCTS

Asbestos Roofing and Siding Shingles
Asbestos Flexible Wallboard (Sheetflextos)
Asphalt Roofing Products
Asbestos-Cement Structural Board and Sheathing (Linabestos)
Asbestos Decorative Waltile
K & M Mineral Wool Insulations for the home.

Underline the products on which you want data and mail this coupon today.

NAME_____

NAME OF FIRM_____

ADDRESS_____ 5-4

A GENUINE CEDAR SHINGLE ROOF

Costs Less

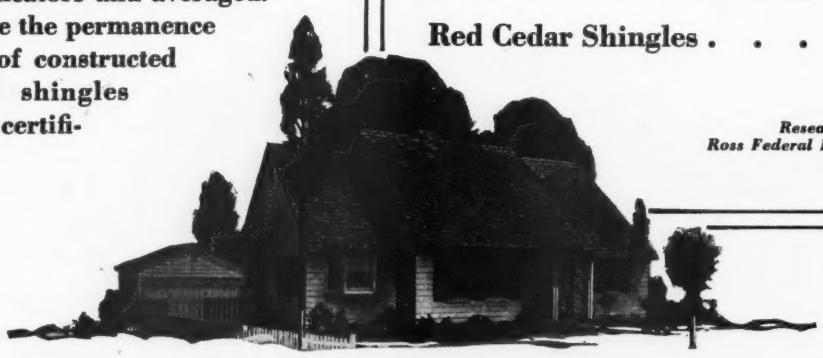
FIGURED BY THE YEARS IT WILL LAST

Actual quotations furnished by applicators of eight types of roofing materials

Prices were obtained and averaged from five zones of the United States and are based on one square of roofing laid, including every item of cost. This cost was divided by the number of years of expected life, given in each case by the applicators and averaged. The figures emphasize the permanence and low cost of a roof constructed with genuine cedar shingles under the Certigrade certificate of inspection.

Type	Cost Per Square Per Year
1	$1.17
2	.90
3	.81
4	.80
5	.70
6	.69
7	.63
Red Cedar Shingles	.33

Research made by Ross Federal Research Corporation.



Immunity to Storm Damage

Complete immunity from storm damage is obtained by the use of genuine cedar shingles when applied with a recommended weather exposure and the use of hot-dipped zinc or other rust-proof nails. A force of eighty-five pounds is required before a properly nailed cedar shingle can be pulled from a roof. Hail does not split, crack or puncture red cedar shingles.

Provide Good Insulation

Careful tests made in the laboratory of the College of Forestry, University of Washington, on a roof section of grade one 18" cedar shingles laid 5½" to the weather on solid sheathing show a heat transmission rate of only 0.28 B.T.U. per degree Fahrenheit of temperature difference below and above the roof. Equally important is this insulation in summer for cooler bedrooms.

This Certigrade Cedar Shingle handbook, prepared by a wood technologist, mailed free on request. One hundred pages detailing the uses, application and technical data. Write the Red Cedar Shingle Bureau, Seattle, Wash., U. S. A., or Vancouver, B. C., Canada.

For Guaranteed Grades and Quality, Specify—

CERTIGRADE

Red Cedar CERTIGRADE Red Cedar SHINGLES ON ALL GRADES *Shingles*

Certigrades pass official inspection for grade and quality.

Sold only by established lumber dealers.

. . . AND LET CRANE PLAN IT FOR YOU

YOU can make the kitchen your main talking point in selling a house—you can give your prospects a plus reason for buying—you can assure them years of happy, home comfort by the simple expedient of letting Crane plan the kitchens in your properties.

Crane Family Planned Kitchens are humanized kitchens offering all the efficiency of scientific planning plus the advantages of modern livability—inviting dining nooks, intriguing breakfast bars, a host of ideas and a new approach to kitchen planning that delights the heart of every housewife.

Here is a service that will increase the salability of your houses and that will cost you nothing. We shall gladly plan a kitchen, designed to suit the space you have available—without charge. Send for a copy of Crane's kitchen planning guide, "Family Planned Kitchens." Included is a convenient work sheet to make it easy for you to take advantage of Crane Kitchen Planning Service. Mail the coupon today.

CRANE

VALVES • FITTINGS
PIPE • PLUMBING
HEATING • PUMPS

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO

NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS

Crane Co., 836 S. Michigan Ave., Chicago, Ill.

Please send me a copy of "Family Planned Kitchens" without obligation and a copy of the work sheet to use in kitchen layout.

Name.....

Address.....

Town..... *State*.....

AB-8-38

CREATING SALES

FOR BUILDING CONTRACTORS THROUGH THE A.B.C. INSTALLMENT NOTE PURCHASE PLAN OF WEYERHAEUSER

Repairing and modernization purchased through installment payments has opened for builders an enormous source of profitable business. Heretofore, property owners were restricted — lump-sum payments for needed repairs represented forbidding dollar signs—desirable property improvements were postponed for lack of ready cash.

Today the picture has changed. Owners can pay for property improvements through small monthly payments out of income—with the result that small jobs under the old system are now stepped up to attractive and profitable proportions. Here is a typical example: An owner wanted to sell his house. It needed repairs to make it salable. On the lump-sum basis the owner could afford only a $97.00 roof — but the builder, offering the Weyerhaeuser installment payment plan through his dealer, built up the job to over $700.00. The owner sold the house with good profit immediately — the builder and dealer got all their money at completion — and the owner pays in convenient monthly installments.

When Title One Insurance was discontinued by the government in 1937, Weyerhaeuser instituted a plan for the exclusive use of builders and dealers which enabled them to continue installment selling under the Installment Note Purchase Plan provided by Allied Building Credits, Inc.

While government insurance has been reinstated, the use of the Weyerhaeuser plan is rapidly spreading. Builders have learned that in this plan they have a permanent service which places them in a position to sell the complete job, attractively financed, through retail sources of supply which relieve the builder from much irksome detail of arrangement.

For full details about this service — how it can help you in developing more profitable jobs, write us for the names of the dealers in your community who have the Installment Note Purchase Plan.

WEYERHAEUSER SALES COMPANY

SAINT PAUL • MINNESOTA

Away from your desk . . . What is your *Professional Viewpoint* on HEATING?

After you've enjoyed an ample quantity of delicious camp fare—after your pipe is lighted—after you have discussed the catch or bag of the day—conversation often turns to subjects related to your business.

Considered in the same calm, detached manner of camp-fire conversations, what are your opinions on the complicated subject of heating? Have *you* sufficient *facts* and information about modern bituminous coal or coke heating to formulate authoritatively *your* "professional viewpoint" on this type of heating which is yearly becoming more and more important? Have you adequately considered the advisability of providing coal storage, no matter what fuel fad is in your client's mind at the moment?

For ready reference when designing homes for modern heating, we have prepared a portfolio which explains the fundamental principles of designing for modern bituminous coal or coke heating, illustrated with isometric drawings and scale floor plans of typical modern basements. Send for your free copy today.

Copyright—National Coal Association, 1938

NATIONAL COAL ASSOCIATION

NATIONAL COAL ASSOCIATION
The National Organization of Bituminous Coal Operators
804 Southern Bldg. WASHINGTON, D. C.
307 N. Michigan Ave. CHICAGO, ILLINOIS

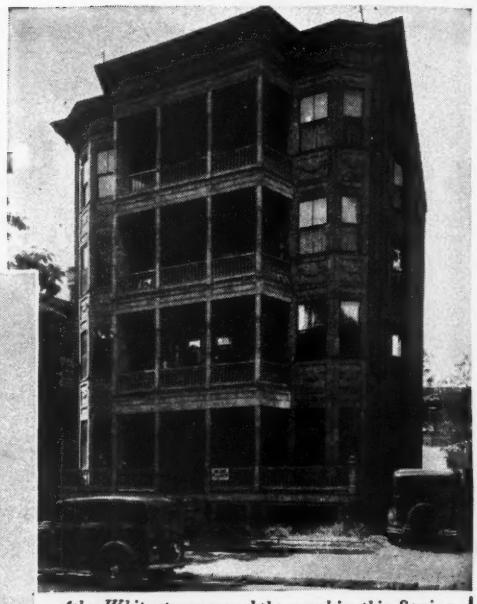
Please send me a set of "Six Typical Basement Designs for Modern Bituminous Coal Heating," A. I. A. File 30-G. I understand there is no obligation involved.

*Name*_____

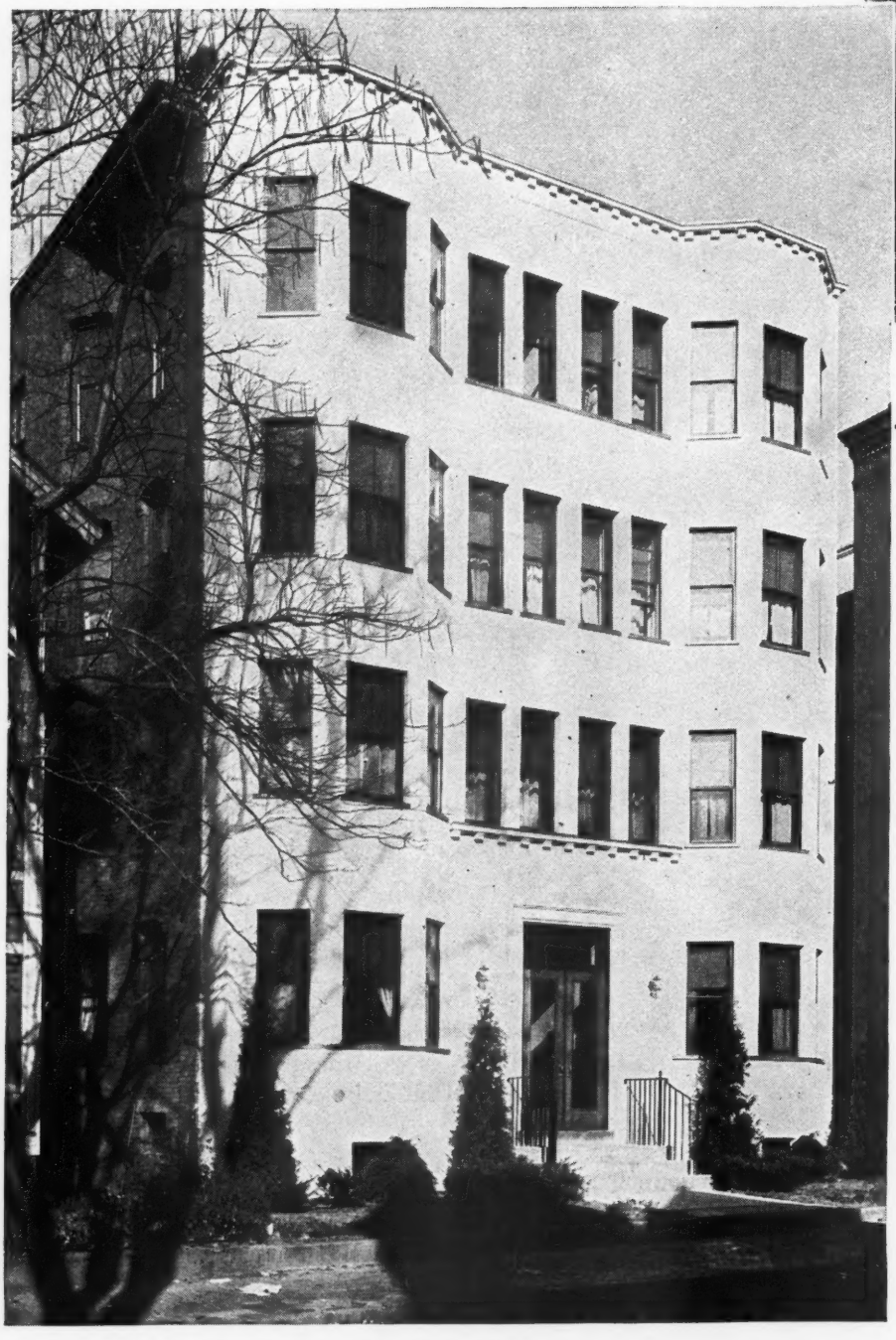
*Firm*_____ *Street*_____

*City*_____ *State*_____ AB-8

How to change an "Eyesore" into an Asset



Atlas White stucco waved the wand in this Spring field, Mass., remodeling magic. Architect, Henry J. Tessier; General and mason contractors, J. G. Roy & Sons Company—both of Springfield.



See how easily this ancient apartment structure was transformed from an ugly liability into an attractive, rentable building!

Cornice and front porches were removed, a simple cornice designed, and the front of the building covered with stucco made with Atlas White portland cement.

You doubtless have similar opportunities for profitable remodeling work. When figuring on such jobs, these are good facts to remember:

1. *White* portland cement stucco gives a building a fresh exterior.
2. It is permanent because it is a thin sturdy wall of concrete with the weather resistance and fire resistance of concrete.
3. It can be applied in any texture and any color.
4. Its cost is moderate and gives service that endures in any climate.

Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South La Salle Street, Chicago.

A FACTORY PREPARED STUCCO IS PREFERABLE

S-13

STUCCO MADE WITH **Atlas White** PORTLAND CEMENT

Presenting:
A SUMMER PROGRAM ... FOR WINTER COMFORT
with WINDOW CONDITIONING
(DOUBLE-GLASS INSULATION)
YOUR NEW HOME...
If you are building a new home, ask your architect or builder about the many efficient types and attractive styles of winter windows and double-glazed sash available for "Window Conditioning."
YOUR PRESENT HOME...
May have the comfort and saving of "Window Conditioning." Storm windows are easy to install and inexpensive to buy. An estimate from your lumber dealer will convince you.
● Start now to do away with the threat of winter chills... ills... and bills. New comfort, better health and economy are yours with "Window Conditioning." This means you insulate your windows with double-glazed sash or storm windows—two panes of glass where only one was used before. Between the two a wall of captive air is formed. This air space is one of the best forms of insulation.
Reliable tests show that "Window Conditioning" saves more in fuel costs than any other single form of house insulation—cuts 20 to 30% right off your fuel bill—permits healthful humidity without having windows fogged up with excessive moisture which collects on uninsulated windows, soils draperies and rugs and spoils woodwork finishes. To "Window Condition" your present home, call the nearest lumber dealer today. He can arrange financing under F.H.A. with *no down payment*. "Window Conditioning" is an investment that can pay for itself in less than two winters and dividends accrue year after year.
Quality Glass Is Important—With double glazing, the quality of the glass is doubly important since you are looking through two pieces of glass instead of one. Because of an exclusive manufacturing process, L·O·F Window Glass is noted for its greater freedom from waviness and distortion, making it especially suited to "Window Conditioning." These advantages cost you no more. When you buy winter windows or double-glazed sash, make sure that each light bears the L·O·F label. It is your guarantee of quality in window glass.
You insulate your windows by applying double-glazed sash or modern storm windows of L·O·F Quality Glass. Here's what "Window Conditioning" does for you—
1. Gives you greater comfort—better health.
2. Cuts fuel bills 20 to 30%.
3. Saves you more than any other single form of house insulation.
4. Makes uniform temperatures easier to maintain throughout the house.
5. Lessens drafty danger zones near windows and floors.
6. Makes healthful humidity possible without foggy windows, soiled draperies and moisture on window sills.
7. Reduces cleaner's bills and even doctor's bills.
8. Fuel savings help pay for a modern heating plant.
9. "Window Conditioning" is a sound investment—fuel savings alone can pay for it in less than two winters. Dividends continue year after year. Financed under F.H.A.—no down payment.
● Send coupon for free L·O·F booklet completely describing "Window Conditioning," and containing interesting information on treatment of windows.
LIBBEY·OWENS·FORD GLASS COMPANY, TOLEDO, OHIO
Please send me your free booklet which shows typical examples of economies effected with "Window Conditioning" and interesting window treatments.
Name
Address
City State
FREE!
LIBBEY·OWENS·FORD
QUALITY GLASS
LOOK FOR THE LABEL

● This appealing advertisement is the second of a series that will reach millions of home owners and prospective home builders—YOUR CUSTOMERS.

...TO STEP UP YOUR SALES OF SASH —*Way up!*

● L·O·F advertising will bring the comforts and economies of "Window Conditioning" prominently to the front in the public mind—in such widely read publications as Saturday Evening Post... Collier's... Good Housekeeping... American Home... Better Homes & Gardens... House & Garden... House Beautiful... Parents' Magazine. This advertising will create an urge to own—and a complete merchandising plan will convert this urge into ORDERS. Announced but a few weeks ago, this plan has been enthusiastically received by hundreds of progressive lumber dealers and builders. Such active support of this campaign is bound to step up sales. Today—RIGHT THIS MINUTE—is the best time to write for complete details. Libbey·Owens·Ford Glass Company, Toledo, O.

EASY TO INSTAL

KIMSUL

REG. U. S. & CAN. PAT. OFF.

Expanding Blanket

INSULATION

These photographs show the ease and sp with which Kimsul* can be installed at those points where protection against heat loss is most esse

Ⓐ *Side Walls:* Kimsul comes in blankets the right size t snugly without cutting or fitting in standard spaces bet studs. Merely nail on at top . . . pull down like a roller s and fluff . . . then fasten at bottom. Just a few moments requ to install a continuous, unbroken blanket of efficient insula

Ⓑ *Sloping Roofs* usually constitute one of the most difficul sulating jobs. Yet it is comparatively simple when Kims used. Fasten at top, pull down like a shade and fasten at tom. Then attach with laths along the edges. The Kims there . . . permanently.

Ⓒ *Attic Floors:* An unfinished, uninsulated attic floor is re sible for a woeful waste of heat . . . with Kimsul that cond can be corrected quickly and inexpensively. Install Ki blankets directly on the plaster base, between floor joist panding them as they are installed. When necessary to use or more lengths of Kimsul the splices should be made by ing the two overlapping ends between laths.

Kimsul is now being Regularly Advertised in "Better Homes Gardens" and "American Home," having a combined circul tion of more than 3 million copies monthly. If you haven't the facts about this modern insulation, use the coupon belo

See that the insulation you choose meets all these requirements.

1 EFFICIENCY: ("K" factor .27) Kimsul is made of wood fibres whose natural high resistance to heat is increased by interweaving, creping, and laminating.

2 FLEXIBILITY: Pliant as cloth, Kimsul can be tucked snugly into odd spaces, around windows, electric wires, etc.

3 PERMANENCE: Processed with asphalt and non-toxic chemicals, Kimsul is highly resistant to fire, vermin and moisture.

4 NON-SETTLING: Kimsul stays put. It will not shred, sift, nor pack down . . . is unaffected by settling of walls, or vibrations.

5 LIGHTNESS: 1,000 square feet of Kimsul weigh only 131.5 pounds. It adds practically no structural load

6 PROPER THICKNESS: Kimsul's one-inch thickness provides maximum returns in comfort and fuel savings for the money invested.

7 NO WASTE: Every square inch can be used. Odd pieces can be employed as caulking.

8 EASE OF HANDLING AND INSTALLING: Kimsul is extremely light and is made the right width to fit between studs . . . practically no cutting or fitting needed.

9 EXPANDABILITY: Kimsul blankets are made in 20" lengths, expandable to from 8 feet to nearly 10 feet by nailing one end to the header, drawing down on the free end, as you would a roller shade, fluffing, and fastening to the floor plate. This Kimsul feature speeds up work and

KIMBERLY-CLARK CORPORATION (Kimsul Division), Neenah, Wisco

Established 1872

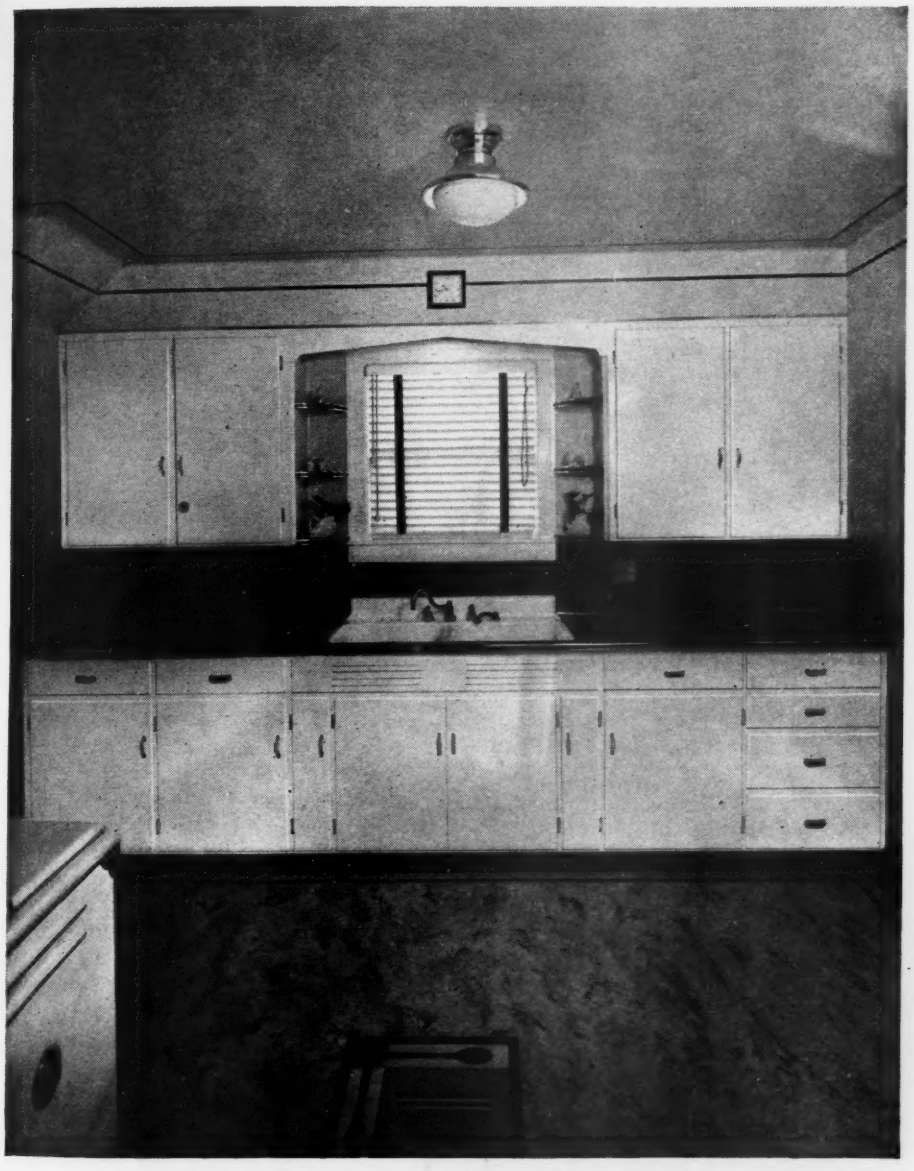
NEW YORK, 122 East 42nd Street • CHICAGO, 8 South Michigan Aven

Mail me, without obligation, copy of booklet describing Kimsul, also a

Name _____

Address _____

Kitchens sell homes . . and
Sealex Floors, Walls and Ceilings
sell Kitchens!



A floor built-to-order at practically ready-made cost! This smart kitchen features a Personal-ized* Floor of Sealex Linoleum . . . Sealex Veltone field, with ready-made, low-cost Sealex Inset, Feature and Border Strip. The walls and ceiling of this room will last as long as the house itself. For both are finished with beautiful, washable Sealex materials.

*Trademark Registered, U. S. Pat. Off., Congoleum-Nairn Inc.

MODERN ranges—refrigerators—*everything* in the kitchen must be thoroughly up-to-the-minute to sell homes today *—including the floors and walls!* Progressive builders have found that Sealex Linoleum Floors and Walls quickly win over prospective home buyers.

Perfectly smooth and sanitary —Sealex materials have no cracks to harbor dirt. So easy to keep spotlessly clean! Fadeproof, wearproof colors! And no costly refinishing! These Sealex features provide irresistible sales appeal. Let modern walls and floors of Sealex Linoleum help you sell homes!

Installed by authorized contractors, Sealex Floors and Walls are backed by a guaranty bond fully covering your investment. Write for details today!

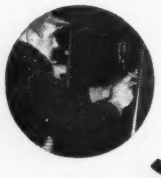
CONGOLEUM-NAIRN INC., KEARNY, N.J.

SEALEX LINOLEUM
TRADEMARK REGISTERED

Floors and Walls

All CARDS ARE ON THE TABLE WHEN YOU RECOMMEND Balsam Wool

INSULATION that makes you *guess* about performance—application—permanence—won't meet 1938 standards. Balsam-Wool SEALED Insulation lays all its cards on the table—meets *every* requirement and need. Today, at a 50% saving in application costs, it provides the SURE way to insulate. You will find it worth while to have complete information—yours for the asking.



Sure APPLICATION

- New method cuts application cost in half—makes a more efficient, tighter job.
- Balsam-Wool is firmly fastened in place—once applied it is there to stay.
- No job skimping with Balsam-Wool—no half insulated or uninsulated spaces.

Sure EFFICIENCY

- Factory controlled density and thickness.
- A moisture barrier proved by 16 years of performance.
- Windproof—fire-resistant—protected from termites and dry rot—three thicknesses to fit every need.

Sure PERMANENCE

- Balsam-Wool keeps its efficiency permanently—does not disintegrate or change its form.
- Balsam-Wool does not sag, settle, or get out of place.
- Balsam-Wool, with its new method of application, provides the double air spaces which assure maximum lasting insulation efficiency.

WOOD CONVERSION COMPANY
ROOM 119-8, FIRST NATIONAL BANK BLDG., ST. PAUL, MINN.

Balsam Wool
SEALED INSULATION

BALSAM-WOOL...PRODUCTS OF WEYERHAEUSER...NU-WOOD

Use All 3 LEHIGH PRODUCTS

LEHIGH NORMAL CEMENT

Lehigh Portland Cement is known and used from coast to coast. Its dependability, its uniformity, its quick availability have established it as a quality product for any use of cement where normal curing time may be allowed.

LEHIGH EARLY STRENGTH CEMENT

To meet the demand for quick service concrete, Lehigh's research and experimental facilities were utilized to develop Lehigh Early Strength Cement. Possessing all the well-known qualities of Lehigh Cement, Lehigh Early Strength Cement cures to service strength 3 to 5 times faster than normal portland cement used under the same conditions. It makes concrete of maximum density and plasticity. Use it whenever speed is necessary or may be an economy.

LEHIGH MORTAR CEMENT

The modern demand for the ideal all-purpose masonry mortar is completely met with Lehigh Mortar Cement. Extreme plasticity, high water retention, strong bond, adhesiveness, minimum shrinkage, water repellency, and good strength satisfy every requirement. With only sand and water to add, there is less work at the mortar box. Use it for laying up any type of masonry units.

Lehigh products may be shipped in mixed cars and are generally available through leading building material merchants. The Lehigh Service Department will gladly answer any inquiries pertaining to the specific use of any Lehigh product, or informative literature will be sent.

LEHIGH PORTLAND CEMENT COMPANY

ALLENTOWN, PA. CHICAGO, ILL. SPOKANE, WASH.

PAINE REZO DOORS

TRADE MARK REGISTERED

Are Available For

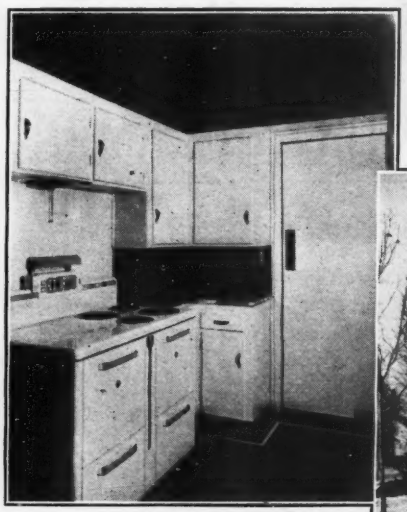
ALL PURPOSES!

The Complete REZO Home—

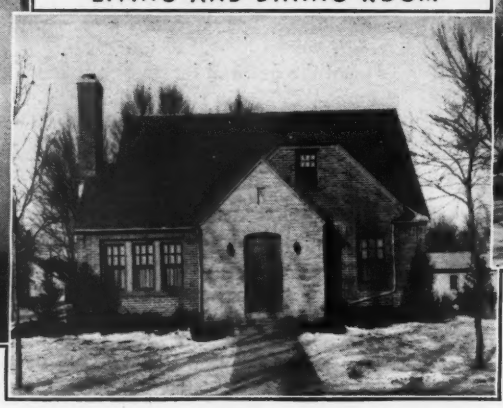
HALL

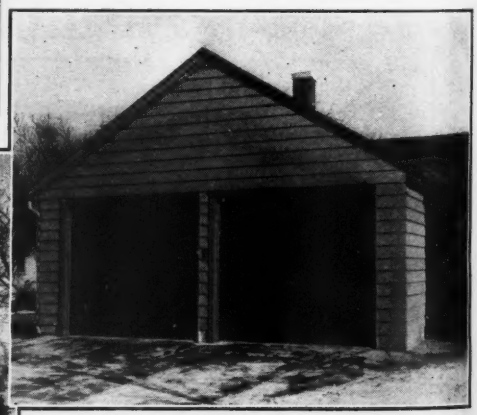
BED ROOM

LIVING AND DINING ROOM



KITCHEN





GARAGE

THIS HOME IS *completely equipped* WITH REZO DOORS

- **REZO DOORS COST LESS**—TO FIT AND HANG TO PAINT—TO MAINTAIN
- NEVER REQUIRE REFITTING
- THE FINAL INSTALLED AND FINISHED COST OF PAINE REZO DOORS IS NO MORE THAN COMMON PANEL DOORS

PAINE LUMBER CO. LTD.

Established 1855

OSHKOSH, WISCONSIN

HAVE YOU TIME FOR SIX MORE JOBS?

CONCRETE MADE WITH MARQUETTE HIGH EARLY STRENGTH CEMENT — READY IN 1/7th THE USUAL TIME —GIVES YOU TIME AND USE OF EQUIPMENT FOR SIX MORE JOBS

MARQUETTE
HIGH EARLY STRENGTH
PORTLAND CEMENT

Many examples of how time and money can be saved contained in an illustrated 72-page "User's Manual" sent free on request.

MARQUETTE CEMENT MFG. CO.

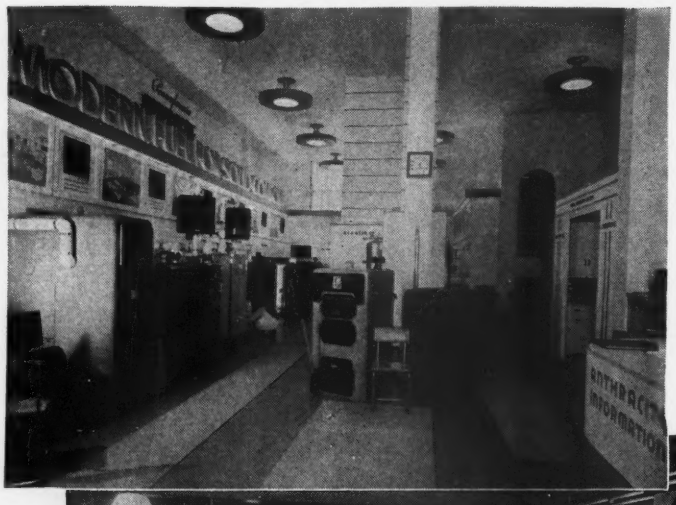
CHICAGO ✦ MEMPHIS

3 PERMANENT HEATING EXHIBITS!

MODERN ANTHRACITE EQUIPMENT FOR THE BUILDER'S CONVENIENT INSPECTION

BOSTON
644 BEACON ST.

PHILADELPHIA, 2204 WALNUT STREET



NEW YORK, 101 PARK AVENUE

Every day, more builders visit these permanent exhibits of Anthracite Industries, Inc., in Philadelphia, New York and Boston. Here in convenient locations, builders can examine the newest equipment developments. In these days the annual cost of heating, rather than the unit cost of fuel, is becoming more and more important to those who buy and build homes. The public is becoming increasingly aware of the new convenience and modern comfort to be found in today's Anthracite equipment, added to the inherent safety, cleanliness and economy of the fuel.

At the three permanent showrooms, all information regarding any heating requirement for new projects will be provided. Information about modernizing existing heating systems is also available.

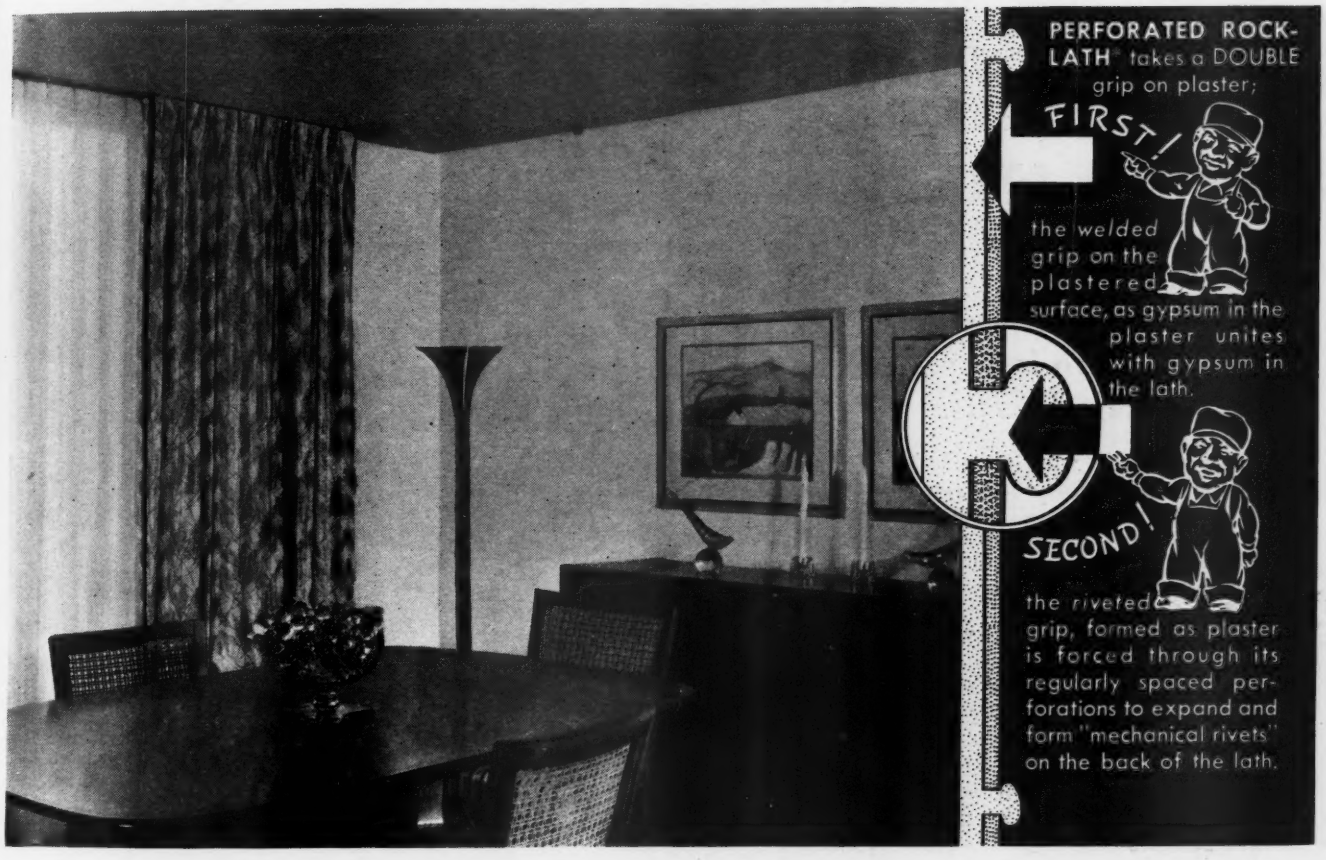
These permanent exhibits are maintained for the convenience of every one interested in heating. Visit them and see the newest and most modern developments in the field of ho ne-heating today.

ANTHRACITE INDUSTRIES, INC.
CHRYSLER BUILDING, NEW YORK

Plaster is WELDED AND RIVETED to walls when applied over

Perforated Rocklath

THE FIREPROOF LATH


PERFORATED ROCK-LATH takes a DOUBLE grip on plaster;
FIRST!
the welded grip on the plastered surface, as gypsum in the plaster unites with gypsum in the lath.
SECOND!
the riveted grip, formed as plaster is forced through its regularly spaced perforations to expand and form "mechanical rivets" on the back of the lath.

WHEN your customer asks that all-important question. "How about the wall and ceiling construction?" be ready to give him (or her) this dramatic, simple sales-clinching explanation.

"These walls and ceilings will be as good looking years from now as they are today. Plaster is *welded* and *riveted* to them—because it's applied over Perforated Rocklath.* Their surface will remain smooth and even. They'll resist cracks, stains and other blemishes that may mar the beauty of walls built of old-fashioned lathing materials.

"These walls will give you added fire protection as well. USG tests made at the Bureau of Standards qualify partitions built of Perforated Rocklath plastered with one-half inch of gypsum plaster for a one-hour fire rating."

***YOU* can have all these sales advantages for *your* houses at little, if any, extra cost. For, with all its virtues, Perforated Rocklath now costs little more—sometimes no more—than the cheapest kind of old-fashioned plaster lath.**

FREE—*an attractive illustrated guide to finer, safer, more economical wall and ceiling construction. Contains information on Lathing, Plastering, Decoration. The coupon below will bring your copy.*

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Johns-Manville Announces

IMPORTANT PRICE REDUCTION ON J-M ROCK WOOL BATTS

New *LOW PRICE* effective July 1st enables builders to use this famous insulation in houses of any price class

DON'T think you can't afford Johns-Manville Rock Wool in your houses! Get the facts. For the last 4 years the price of J-M Rock Wool Batts has gone steadily down. Now with this latest reduction there is no reason why you cannot have the selling advantages of "Insulated with Johns-Manville Rock Wool."

People want homes that are "cooler in summer, warmer in winter." And they have learned that there are different kinds of insulating materials with different degrees of efficiency. That is why more and more home buyers insist on the name "Johns-Manville," the best known name in insulation.

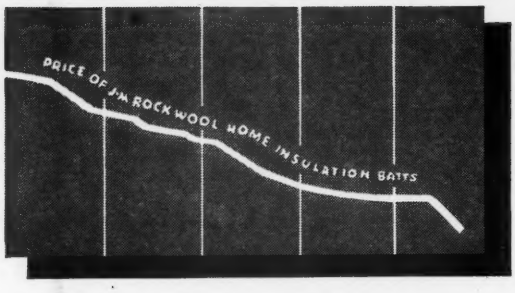
There is a complete line of Johns-Manville Rock Wool to meet every condition. Ful-Thik Super Batts—Semi-Thik Batts for sidewalls—Junior Batts and Type C where lowest initial cost is important. And when you use J-M Rock Wool in your houses, we furnish an attractive selling plaque which shows prospects that you are offering them a quality product. Let us give you complete information. Write Johns-Manville, 22 East 40th Street, New York.

JOHNS-MANVILLE JM PRODUCTS

THE BEST KNOWN NAME IN INSULATION IS

JOHNS-MANVILLE

'34 '35 '36 '37 '38



DOWN . . . DOWN . . . DOWN!

Against the trend of steadily rising prices, J-M Rock Wool Batts have been steadily reduced. Today, every home can have this modern, efficient insulation.

HANDLE EASILY

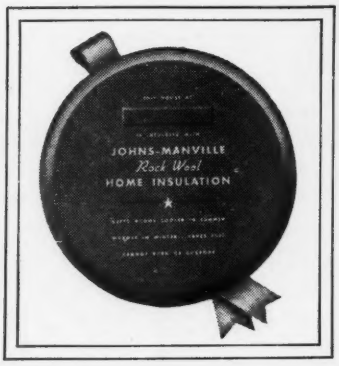
The heavy waterproof backing makes J-M Rock Wool Batts convenient to apply, improves handling quality. In addition, it protects against wet plaster. The tacking flange is particularly useful on overhead work . . . insures tight application.

SIDEWALL ECONOMIES

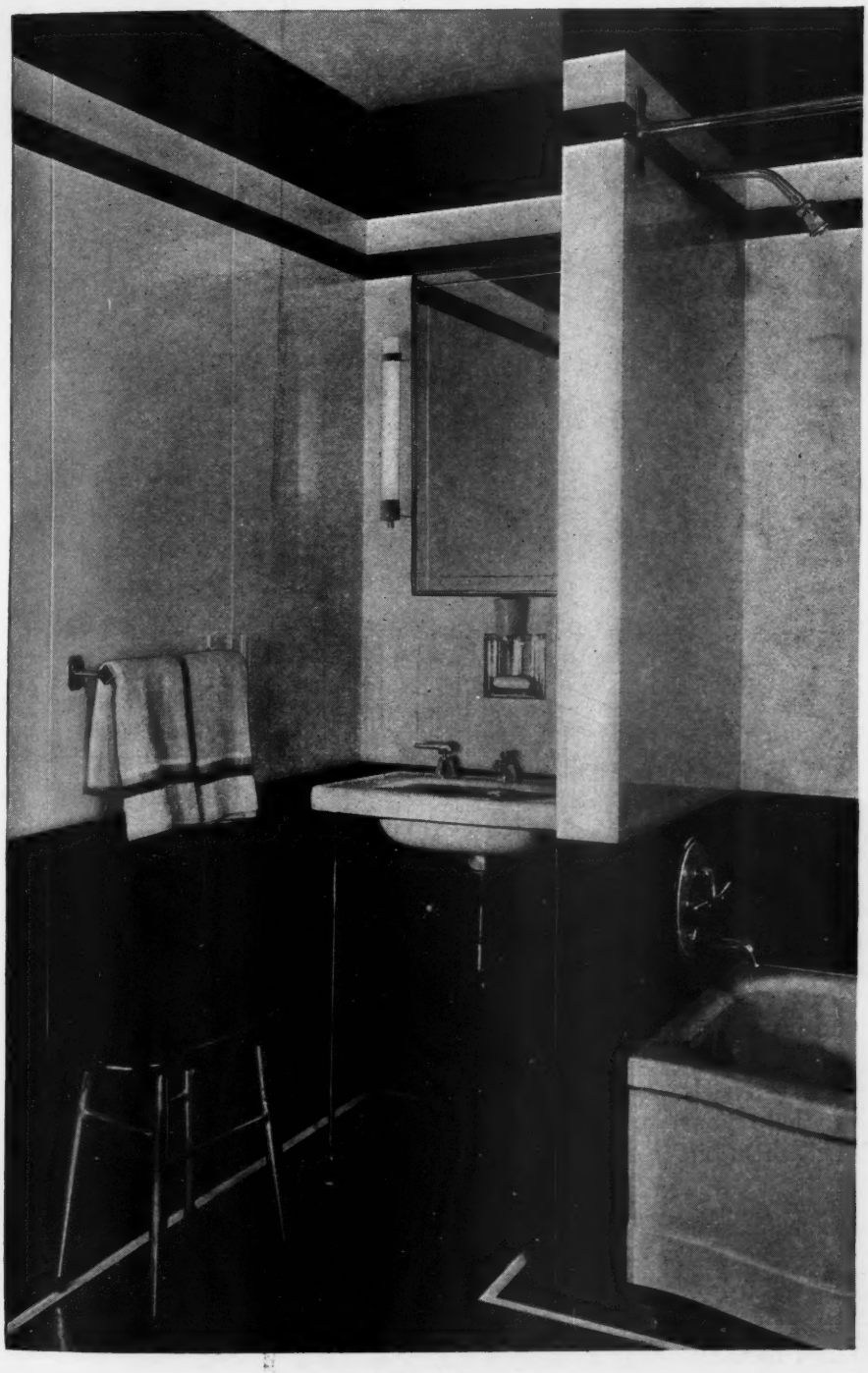
J-M Semi-Thik Batts give adequate insulation on sidewalls . . . at lower cost. Exactly the same high-efficiency insulating material as used in J-M Ful-Thik Batts, and provided with a heavy waterproof backing.

TO HELP YOU SELL

This attractive plaque is furnished free by J-M, to display in your houses. It gives you the extra selling value of the best known name in building materials . . . shows that you have used first-quality products. Ask your J-M Representative about it.



CARRARA builds *Bathrooms of Distinction*



WHEN a client wants a bathroom in her home that's tops in good looks, lasting qualities and practical utility, the sure-fire way to give it to her is to use Carrara Structural Glass.

Here's a material that's really beautiful. Its surface is uniformly smooth and lustrous, with the accurate, mirror-like reflective quality which only a mechanically ground and polished structural glass can provide. And it's available in ten permanently attractive colors.

It's a practical material, too. Never checks, crazes, stains or fades. Never absorbs bathroom odors (or cooking odors either, if you use it for kitchen walls). Never grows old or dull looking. Never requires any attention except an occasional wiping with a damp cloth. It's easy to install . . . usually goes on right over the old walls on a remodeling job. And it's the kind of material that's really worthy of your quality workmanship.

In building new homes, or in remodeling the bathrooms and kitchens of old ones, use Carrara for rooms of distinction. Let us send you our free book of information about this fine material. Write us and ask for "Carrara, the Modern Structural Glass." Carrara is manufactured by Pittsburgh Corning Corporation, 2364A Grant Bldg., Pittsburgh, Pa., also makers of PC Glass Blocks.

• • •

A BATHROOM with walls of Carrara is a bathroom to please any client's fancy. It's good-looking, permanent, easy-to-clean. And you'll find that one Carrara job leads to another. Note the accurate reflections in these walls, possible only when you use a ground and polished glass.

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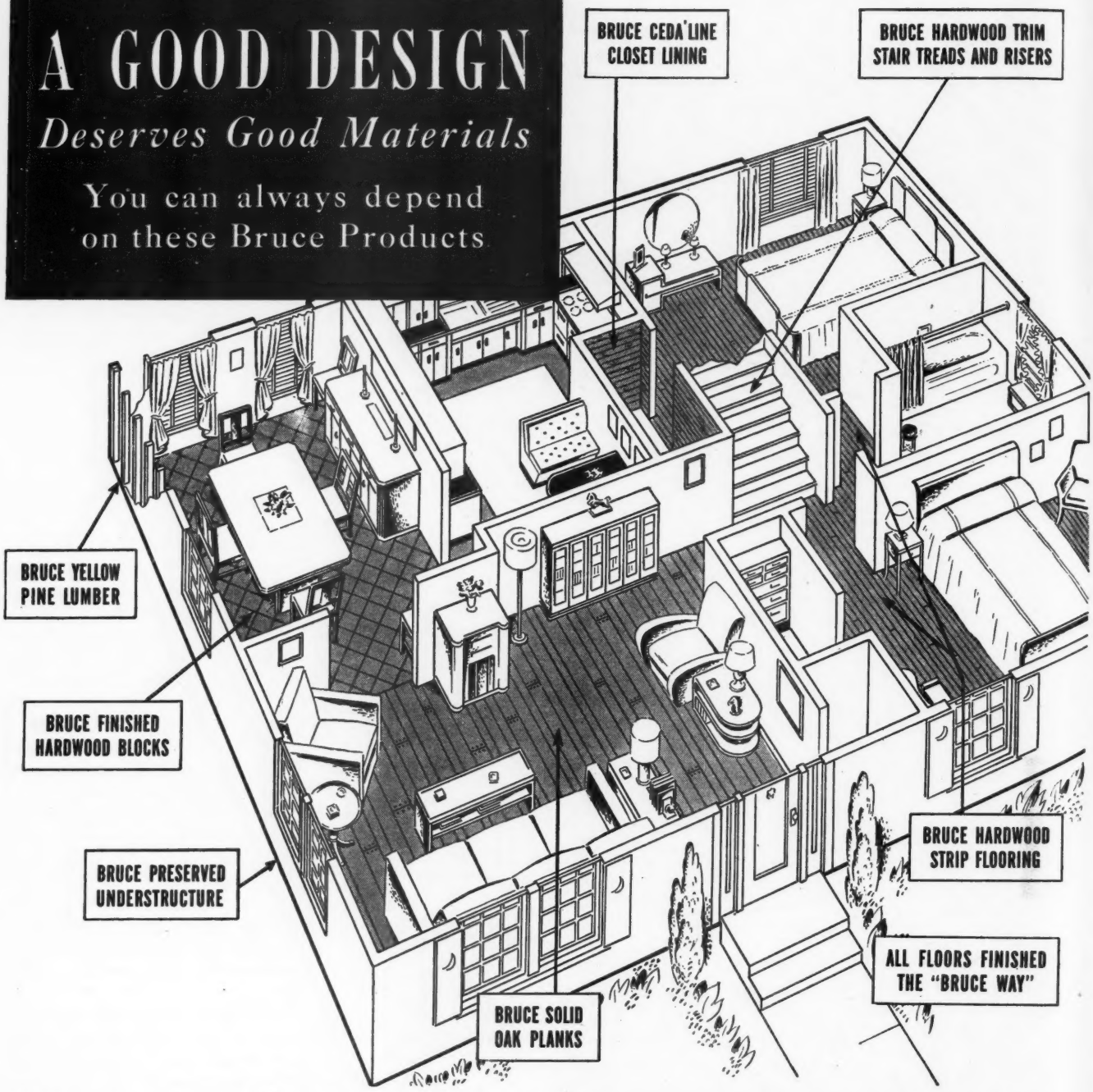
PITTSBURGH PC CORNING *Carrara* THE MODERN STRUCTURAL GLASS

A GOOD DESIGN

Deserves Good Materials

You can always depend on these Bruce Products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● This cross-section drawing shows the important parts of a home for which you can specify "Bruce" and rely on Bruce quality and Bruce uniformity. It also suggests how Bruce Products can help your homes have style and character . . . "lift" them out of the ordinary class.

Some Bruce Products have features no other manufacturer can offer. All measure up to the highest standards of good construction and are "made to last for generations." They definitely contribute to the beauty and durability of a home, mark it as individually planned and architecturally designed.

Examine the drawing above and familiarize yourself with the complete line of Bruce Products. You'll find them described in your Sweet's Catalog —and the coupon below will bring you additional information.

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